Undergraduate Academic Board
Agenda

September 12, 2014
2:00-5:00
ADM 204

I. Roll

( ) Alberta Harder (FS)
( ) Utpal Dutta (FS)
( ) Francisco Miranda (CAS, Chair)
( ) Barbara Harville (CAS)
( ) Vacant (CAS)
( ) Vacant (CAS)
( ) Vacant (CBPP)
( ) Vacant (COH)
( ) Vacant (COH)
( ) Irasema Ortega (COE)
( ) Carrie King (CTC)
( ) Jeff Hoffman (SOE)
( ) Kevin Keating (LIB)
( ) Rick Adams (KPC)
( ) Sheri Denison (Mat-su)
( ) Jared Griffin (Kod)
( ) Christina Stuive (ADV)

Ex-Officio Members
( ) Susan Kalina
( ) Lora Volden
( ) Scheduling and Publications

II. Approval of the Agenda (pg. 1-4)

III. Approval of Meeting Summary (pg. 5-9)

IV. Administrative Report

A. Vice Provost for Undergraduate Academic Affairs Susan Kalina

B. University Registrar Lora Volden

V. Chair's Report

A. UAB Chair- Francisco Miranda

B. GERC

VI. New Business

A. Presentation from HR Director, Ron Kamahele

VII. Program/Course Action Request- Second Readings

Chg	ENGL A109	Introduction to Writing in Academic Contexts (3 cr)(3+0)(pg. 10-15)

VIII. Program/Course Action Request- First Readings

Add	JUST A432	Crime Analysis and Mapping (3 cr)(3+0)(pg. 16-21)
Add	VTCH A121	Small Animal Medicine (3 cr)(3+0)(pg. 22-26)
Add	VTCH A122	Veterinary Surgical Nursing (3 cr)(3+0)(pg. 27-31)
Add	VTCH A122L	Veterinary Surgical Nursing Laboratory (1 cr)(0+3)(pg. 32-36)
Add	VTCH A130	Applied Small Animal Behavior I (1 cr)(1+0)(pg. 37-41)
Add	VTCH A195	Clinical Externship I (3 cr)(0+9)(pg. 42-46)
Add	VTCH A223	Veterinary Microbiology and Parasitology (3 cr)(3+0)(pg. 47-52)
Add	VTCH A223L	Veterinary Microbiology and Parasitology Laboratory (1 cr)(0+3)(pg. 53-58)

Add	VTCH A231	Veterinary Diagnostic Imaging and Dentistry (2 cr)(2+0)(pg. 59-63)
Add	VTCH A231L	Veterinary Diagnostic Imaging and Dentistry Laboratory (1 cr)(0+3)(pg. 64-69)
Add	VTCH A232	Veterinary Anesthesia and Analgesia (3 cr)(3+0)(pg. 70-75)
Add	VTCH A232L	Veterinary Anesthesia and Analgesia Laboratory (1 cr)(0+3)(pg. 76-81)
Add	VTCH A233	Veterinary Clinical Pathology (3 cr)(3+0)(pg. 82-86)
Add	VTCH A233L	Veterinary Clinical Pathology Laboratory (1 cr)(0+3)(pg. 87-91)
Add	VTCH A240	Applied Small Animal Behavior II (1 cr)(1+0((pg. 92-97)
Add	VTCH A241	Laboratory and Exotic Animal Medicine (2 cr)(2+0)(pg. 98-103)
Add	VTCH A241L	Laboratory and Exotic Animal Medicine Laboratory (1 cr)(0+3)(pg. 104-109)
Add	VTCH A242	Large Animal Medicine and Clinical Procedures (2 cr)(2+0)(pg. 110-115)
Add	VTCH A242L	Large Animal Medicine and Clinical Procedures (1 cr)(0+3)(pg. 116-121)
Add	VTCH A243	Career Success for Veterinary Technicians (1 cr)(1+0)(pg.122-127)
Add	VTCH A244	Veterinary Technician National Exam Preparation (1 cr)(1+0)(pg.128-131)
Add	VTCH A295	Clinical Externship II (3 cr)(0+9)(pg. 132-138)
Add		AAS, Veterinary Technology (pg. 139-145)
Del	ANTH A336	Peoples and Cultures of Scandinavia (3 cr)(3+0)(pg. 146)
Chg	ANTH A415	Applied Anthropology (Stacked with ANTH A615) (3 cr)(3+0)(pg. 147-155)
Del	ANTH A435	Northwest Coast Cultures (3 cr)(3+0)(pg. 156)
Chg	ANTH A454	Culture and Ecology (GER)(Stacked with ANTH A654) (3 cr)(3+0)(pg. 157-175)
Add	ANTH A465	Culture and Globalization (GER)(stacked with ANTH A665) (3 cr)(3+0)(pg. 176-193)
Del	ANTH A483	Archaeology of Animals (stacked with ANTH A683) (4 cr)(3+2)(pg. 194-195)
Del	ANTH A484	Lithic Technology (3 cr)(3+0)(pg. 196)
Del	ANTH A485	Human Osteology (Stacked with ANTH A685) (4 cr)(3+2)(pg. 197)
Del	ANTH A486	Applied Human Osteology (Stacked with ANTH A686) (3 cr)(3+0)(pg. 198-199)

Chg		Bachelor of Arts, Anthropology (pg. 200-211)
Chg		Bachelor of Science, Anthropology (pg. 201-211)
Add	BIOL A108	Principles and Methods in Biology (6 cr)(3+9)(pg. 212-216)
Add	BIOL A442	Experiential Learning: Animal Behavior (3 cr)(1+4)(pg. 217-220)
Chg	BIOL A451	Microbial Biotechnology (3 cr)(3+0)(pg. 221-224)
Add	BIOL A453	Experiential Learning: Microbial Ecology (4 cr)(2+4)(pg. 225-229)
Add	BIOL A454	Experiential Learning: Microbial Biotechnology (4 cr)(2+4)(pg. 230-234)
Add	BIOL A455	Experiential Learning: Bioinformatics (4 cr)(2+4)(pg. 235-240)
Chg	BIOL A462	Virology (stacked with BIOL A662 (3 cr)(3+0)(pg. 241-252)
Add	BIOL A463	Molecular Biology of Cancer (3 cr)(3+0)(pg. 253-256)
Add	BIOL A464	Metals in Biology (3 cr)(3+0)(pg. 257-261)
Chg	BIOL A465	Experiential Learning: Molecular Biology (stacked with BIOL A665) (4 cr)(2+4)(pg. 262-271)
Chg	BIOL A471	Immunology (Crosslisted with CHEM A471)(3 cr)(3+0)(pg. 272-277)
Chg	CHEM A471	Immunology (Crosslisted with BIOL A471)(3 cr)(3+0)(pg. 278-283)
Chg	BIOL A472	Biogeography (3 cr)(3+0)(pg. 284-287)
Chg	BIOL A473	Conservation Biology (GER)(3 cr)(3+0)(pg. 288-292)
Add	BIOL A474	Ecotoxicology (3 cr)(3+0)(pg. 293-296)
Add	BIOL A475	Fish Ecology (3 cr)(3+0)(pg. 297-300)
Add	BIOL A476	Wildlife Population Dynamics and Management (3 cr)(3+0)(pg 301-305)
Chg	BIOL A478	Biological Oceanography (stacked with BIOL A678)(3 cr)(3+0)(pg. 306-311)
Add	BIOL A480	Ecological and Conservation Genetics (3 cr)(3+0)(pg. 312-316)
Chg	BIOL A481	Marine Biology (GER)(3 cr)(3+0)(pg. 317-321)
Add	BIOL A482	Spatial Ecology (3 cr)(3+0)(pg. 322-326)
Add	BIOL A483	Exploration Ecology (2 cr)(2+0)(pg. 327-331)
Add	BIOL A484	Experiential Learning: Exploration Ecology Field Study (4 cr)(0+8)(pg. 332-336)
Add	BIOL A486	Evolutionary Ecology (3 cr)(3+0)(pg. 337-341)
Chg	BIOL A487	Comparative Anatomy of Vetebrates (3 cr)(3+0)(pg. 342-344)
Chg	BIOL A488	Experiential Learning: Development Biology (4 cr)(2+4)(pg. 345-348)

Chg	BIOL A489	Population Genetics and Evolutionary Processes (GER)(3 cr)(3+0)(pg. 349-353)
Chg	BIOL A495	Instructional Practicum: Laboratory (1 cr)(0+3)(pg. 354-356)
Chg		Bachelor of Arts, Biological Sciences (pg. 357-381)
Chg		Bachelor of Science, Biological Sciences (pg. 359-381)
Chg		Bachelor of Science, Natural Sciences (pg. 382-408)

IX. Old Business

X. Informational Items and Adjournment

Undergraduate Academic Board
Summary

August 29, 2014
2:00-5:00
ADM 204

I. Roll

(x) Alberta Harder (FS)
(x) Utpal Dutta (FS)
(x) Francisco Miranda (CAS, Chair)
(x) Barbara Harville (CAS)
( ) Vacant (CAS)
( ) Vacant (CAS)
( ) Vacant (CBPP)
( ) Vacant (COH)
( ) Vacant (COH)
(x) Irasema Ortega (COE)
(x) Carrie King (CTC)
(x) Jeff Hoffman (SOE)
(x) Kevin Keating (LIB)
(x) Rick Adams (KPC)
(x) Sheri Denison (Mat-su)
(x) Jared Griffin (Kod)
(x) Christina Stuive (ADV)

Ex-Officio Members
(x) Susan Kalina
(x) Lora Volden
(x) Scheduling and Publications

II. Approval of the Agenda (pg. 1-5)
Approved

III. Approval of Meeting Summary (pg. 6-9)
Approved

IV. Administrative Report

***A.* Vice Provost for Undergraduate Academic Affairs Susan Kalina**
Worked over the summer to create a website for Undergraduate Academic Affairs. There is also a new policy site under the Provost's website which includes information on academic assessment. The 2014 Annual Academic Assessment Seminar will be held on Friday, September 12 from 9:00-3:00 in Library 307.

Programs approved by the NWCCU this summer include the Marriage and Family Therapy graduate certificate, Alutiiq language OEC, and the Alaska Native Business Management minor.

***B.* University Registrar Lora Volden**
Reminder for faculty initiators to use the new 2014-2015 curriculum catalog for course and program proposals.

V. Chair's Report

A. UAB Chair- Francisco Miranda

B. GERC

VI. New Business

A. Physics Prerequisite Change Request (pg. 10)
Motion to approve the placement test being codable and therefore able to be moved from "Registration Restrictions" into "Prerequisites" in an effort to streamline the registration process for students and alleviate workload on academic advisors and faculty.
Approved

VII. Program/Course Action Request- Second Readings

VIII. Program/Course Action Request- First Readings

Chg AE A403 Arctic Engineering (Stacked with AE A603)(3 cr)(3+0)(pg. 11-18)
Waive first, approve for second

Add AKNS A218A Alaska Native Drummaking Techniques: Athabascan and Southeast Style (Cross listed w/MUS A218A)(3 cr)(1+2)(pg. 19-22)
Waive first, approve for second

Add MUS A218A Alaska Native Drummaking Techniques: Athabascan and Southeast Style (Cross listed w/AKNS A218A)(3 cr)(1+2)(pg. 23-26)
Waive first, approve for second

Add AKNS A218B Alaska Native Drummaking Techniques: Inupiaq and Yup'ik Style (Cross listed w/MUS A218)(3 cr)(1+2)(pg. 27-30)
Waive first, approve for second

Add MUS A218B Alaska Native Drummaking Techniques: Inupiaq and Yup'ik Style (Cross listed w/AKNS A218B)(3 cr)(1+2)(pg. 31-34)
Waive first, approve for second

Chg SPAN A320 Studies in Contemporary Hispanic Cultures (3 cr)(3+0)(pg. 35-42)
Waive first, approve for second

Chg ENGL A109 Introduction to Writing in Academic Contexts (3 cr)(3+0)(pg. 43-49)
Accepted for first reading, will return to UAB

Chg CE A405 Transportation Engineering I (3 cr)(3+0)(pg. 50-54)
Waive first, approve for second

Chg CE A406 Transportation Engineering II (3 cr)(3+0)(pg. 55-59)
Waive first, approve for second

Add PRT A280 Industrial Petrochemical Processes (3 cr)(3+0)(pg. 60-64)
Waive first, approve for second

Chg Post-Bac Certificate, Elementary Education (pg. 65-74)
Postponed until further notice

Del OEC, CAD for Building Construction (pg. 75-76)
Del AAS, Architectural and Engineering Technology (pg. 77-78)
Del UC, Architectural Drafting (pg. 79-80)
Del UC, Structural Drafting (pg. 81-82)
Del UC, Civil Drafting (pg. 83-84)
Del UC, Mechanical and Electrical Drafting (pg. 85-86)
OEC, AAS, and UC courses are waived for first, approve for second

Add STAT A401 Statistical Methods (stacked with STAT A601)(3 cr)(3+0)(pg. 87-94)
Waive first, approve for second

Chg STAT A402 Scientific Sampling (stacked with STAT A602)(3 cr)(3+0)(pg. 95-102)
Waive first, approve for second

Chg STAT A403 Regression Analysis (stacked with STAT A603)(3 cr)(3+0)(pg. 103-108)
Waive first, approve for second

Chg STAT A404 Analysis of Variance (stacked with STAT A604)(3 cr)(3+0)(pg. 109-115)
Waive first, approve for second

Del STAT A405 Nonparametric Statistics (3 cr)(3+0)(pg. 116)
Already removed

Chg STAT A407 Time Series Analysis (stacked with STAT A607)(3 cr)(3+0)(pg. 117-124)
Waive first, approve for second

Chg STAT A408 Multivariate Statistics (stacked with STAT A608)(3 cr)(3+0)(pg. 125-132)
Waive first, approve for second

Chg Minor, Statistics (pg. 133-135)
Waive first, approve for second

Add VTCH A101 Introduction to Veterinary Technology (1 cr)(1+0)(pg. 136-140)
Waive first, approve for second

Add VTCH A102 Veterinary Medical Terminology (1 cr)(1+0)(pg. 141-144)
Waive first, approve for second

Add VTCH A110 Medical Calculations for Veterinary Technicians (1 cr)(1+0)(pg. 145-150)
Waive first, approve second

Add VTCH A111 Veterinary Office Procedures and Hospital Management
(3 cr)(3+0)(pg. 151-157)
Waive first, approve second

Add VTCH A112 Veterinary Anatomy and Physiology (3 cr)(3+0)(pg. 158-163)
Waive first, approve second

Add VTCH A112L Veterinary Anatomy and Physiology Laboratory (1 cr)(0+3)(pg. 164-170)
Waive first, approve second

Add VTCH A113 Veterinary Nursing Skills (3 cr)(3+0)(pg. 171-176)
Waive first, approve for second

Add VTCH A113L Veterinary Nursing Skills Laboratory (1 cr)(0+3)(pg. 177-182)
Waive first, approve for second

Add VTCH A120 Pharmacology for Veterinary Technicians (2 cr)(2+0)(pg. 183-188)
Waive first, approve for second

All VTCH courses postponed to next meeting
Add VTCH A121 Small Animal Medicine (3 cr)(3+0)(pg. 189-193)
Add VTCH A122 Veterinary Surgical Nursing (3 cr)(3+0)(pg. 194-198)
Add VTCH A122L Veterinary Surgical Nursing Laboratory (1 cr)(0+3)(pg. 199-203)
Add VTCH A130 Applied Small Animal Behavior I (1 cr)(1+0)(pg. 204-208)
Add VTCH A195 Clinical Externship I (3 cr)(0+9)(pg. 209-213)
Add VTCH A223 Veterinary Microbiology and Parasitology (3 cr)(3+0)(pg. 214-219)

Add	VTCH A223L	Veterinary Microbiology and Parasitology Laboratory (1 cr)(0+3)(pg. 220-225)
Add	VTCH A231	Veterinary Diagnostic Imaging and Dentistry (2 cr)(2+0)(pg. 226-230)
Add	VTCH A231L	Veterinary Diagnostic Imaging and Dentistry Laboratory (1 cr)(0+3)(pg. 231-236)
Add	VTCH A232	Veterinary Anesthesia and Analgesia (3 cr)(3+0)(pg. 237-242)
Add	VTCH A232L	Veterinary Anesthesia and Analgesia Laboratory (1 cr)(0+3)(pg. 243-248)
Add	VTCH A233	Veterinary Clinical Pathology (3 cr)(3+0)(pg. 249-253)
Add	VTCH A233L	Veterinary Clinical Pathology Laboratory (1 cr)(0+3)(pg. 254-258)
Add	VTCH A240	Applied Small Animal Behavior II (1 cr)(1+0((pg. 259-264)
Add	VTCH A241	Laboratory and Exotic Animal Medicine (2 cr)(2+0)(pg. 265-270)
Add	VTCH A241L	Laboratory and Exotic Animal Medicine Laboratory (1 cr)(0+3)(pg. 271-276)
Add	VTCH A242	Large Animal Medicine and Clinical Procedures (2 cr)(2+0)(pg. 277-282)
Add	VTCH A242L	Large Animal Medicine and Clinical Procedures (1 cr)(0+3)(pg. 283-288)
Add	VTCH A243	Career Success for Veterinary Technicians (1 cr)(1+0)(pg. 289-294)
Add	VTCH A244	Veterinary Technician National Exam Preparation (1 cr)(1+0)(pg. 295-298)
Add	VTCH A295	Clinical Externship II (3 cr)(0+9)(pg. 299-305)
Add		AAS, Veterinary Technology (pg. 306-312)

All ANTH courses postponed to next meeting

Del	ANTH A336	Peoples and Cultures of Scandinavia (3 cr)(3+0)(pg. 313)
Chg	ANTH A415	Applied Anthropology (Stacked with ANTH A615) (3 cr)(3+0)(pg. 314-322)
Del	ANTH A435	Northwest Coast Cultures (3 cr)(3+0)(pg. 323)
Chg	ANTH A454	Culture and Ecology (GER)(Stacked with ANTH A654) (3 cr)(3+0)(pg. 324-342)
Add	ANTH A465	Culture and Globalization (GER)(stacked with ANTH A665) (3 cr)(3+0)(pg. 343-360)
Del	ANTH A483	Archaeology of Animals (stacked with ANTH A683) (4 cr)(3+2)(pg. 361-362)
Del	ANTH A484	Lithic Technology (3 cr)(3+0)(pg. 363)
Del	ANTH A485	Human Osteology (Stacked with ANTH A685) (4 cr)(3+2)(pg. 364-365)
Del	ANTH A486	Applied Human Osteology (Stacked with ANTH A686) (3 cr)(3+0)(pg. 366-367)
Chg		Bachelor of Arts, Anthropology (pg. 368)
Chg		Bachelor of Science, Anthropology (pg. 369-379)

Biology Courses to be reviewed on September 12th

Add	BIOL A108	Principles and Methods in Biology (6 cr)(3+9)
Add	BIOL A442	Experiential Learning: Animal Behavior (3 cr)(1+4)
Chg	BIOL A451	Microbial Biotechnology (3 cr)(3+0)
Add	BIOL A453	Experiential Learning: Microbial Ecology (4 cr)(2+4)
Add	BIOL A454	Experiential Learning: Microbial Biotechnology (4 cr)(2+4)
Add	BIOL A455	Experiential Learning: Bioinformatics (4 cr)(2+4)
Add	BIOL A463	Molecular Biology of Cancer (3 cr)(3+0)
Add	BIOL A464	Metals in Biology (3 cr)(3+0)
Chg	BIOL A471	Immunology (Crosslisted with CHEM A471)(3 cr)(3+0)
Chg	CHEM A471	Immunology (Crosslisted with BIOL A471)(3 cr)(3+0)
Chg	BIOL A472	Biogeography (3 cr)(3+0)
Chg	BIOL A473	Conservation Biology (GER)(3 cr)(3+0)
Add	BIOL A474	Ecotoxicology (3 cr)(3+0)

Add	BIOL A475	Fish Ecology (3 cr)(3+0)
Add	BIOL A476	Wildlife Population Dynamics and Management (3 cr)(3+0)
Chg	BIOL A478	Biological Oceanography (stacked with BIOL A678)(3 cr)(3+0)
Add	BIOL A480	Ecological and Conservation Genetics (3 cr)(3+0)
Chg	BIOL A481	Marine Biology (GER)(3 cr)(3+0)
Add	BIOL A482	Spatial Ecology (3 cr)(3+0)
Add	BIOL A483	Exploration Ecology (2 cr)(2+0)
Add	BIOL A484	Experiential Learning: Exploration Ecology Field Study (4 cr)(0+8)
Add	BIOL A486	Evolutionary Ecolog (3 cr)(3+0)
Chg	BIOL A487	Comparative Anatomy of Vetebrates (3 cr)(3+0)
Chg	BIOL A488	Experiential Learning: Development Biology (4 cr)(2+4)
Chg	BIOL A489	Population Genetics and Evolutionary Processes (GER)(3 cr)(3+0)
Chg	BIOL A495	Instructional Practicum: Laboratory (1 cr)(0+3)
Chg		Bachelor of Arts, Biological Sciences
Chg		Bachelor of Science, Biological Sciences
Chg		Bachelor of Science, Natural Sciences

IX. Old Business

X. Informational Items and Adjournment

A.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AHUM Division of Humanities	ENGL

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ENGL	A109	N/A	3	(3+0)

6. Complete Course Title
Introduction to Writing in Academic Contexts
Intro Writing Acad Contexts
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☒ Course Description
- ☒ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☒ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Spring/2015 To: 9999/

12. ☐ Cross Listed with N/A
☐ Stacked with N/A
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. See attached coordination table		
2.		
3.		

Initiator Name (typed): SAD Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 4/24/12
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 4/24/12

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Emphasizes longer essays, annotated bibliography, and digital literacy skills in a computerized environment. Teaches students to analyze audience, purpose, and context; to apply conventions of academic writing and basic research; and to use sound revision strategies (including editing for grammar and punctuation). Special Note: Serves as an alternative or complement to PRPE A108 and prepares students for ENGL A111.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[PRPE A086 with a minimum grade of C] OR
[Accuplacer-Reading Comprehension with a score of 065 and Accuplacer-Sentence Skills with a score of 075]

16b. Co-requisite(s) *(concurrent enrollment required)*
N/A

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
N/A

17. ☒ Mark if course has fees standard ENGL fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
To update course CCG and pedagogy.

Initiator (faculty only) Date Sheri Denison Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Revision Date: **February 25, 2014**

II. Course Information

A. College:	College of Arts and Sciences
B. Course Prefix:	ENGL—English
C. Course Number:	ENGL A109
D. Credits:	3.0
E. Contact Hours:	(3 + 0)
F. Course Title:	Introduction to Writing in Academic Contexts
G. Grading Basis:	A-F
H. Implementation Date:	Spring 2015
I. Cross Listing/Stacking:	N/A
J. Course Description:	Emphasizes longer essays, annotated bibliography, and digital literacy skills in a computerized environment. Teaches students to analyze audience, purpose, and context; to apply conventions of academic writing and basic research; and to use sound revision strategies (including editing for grammar and punctuation). Special Note: Serves as an alternative or complement to PRPE A108 and prepares students for ENGL A111.
K. Special Attributes:	N/A
L. Course Prerequisites:	[PRPE A086 with a minimum grade of C] OR [Accuplacer-Reading Comprehension with a score of 065 and Accuplacer-Sentence Skills with a score of 075]
M. Course Fees:	Yes

III. Course Level Justification

ENGL A109 prepares students for successful completion of ENGL A111 and serves as an introductory course to college composition.

IV. Instructional Goals and Student Learning Outcomes

A. Instructional Goals:

The instructor will:

- Familiarize students with digital environments, including basic word processing tools and Blackboard.
- Demonstrate basic research strategies, including information literacy practices, source handling, and APA documentation.
- Introduce principles of academic writing generated for specific purposes, including summary and response, explanatory, analytical, and persuasive writing.

- Demonstrate effective revision strategies.

B. Student Learning Outcomes and Assessment Methods. The student will:

Student Learning Outcomes	Assessment Methods
Construct papers using word processing tools and submit assignments on Blackboard	Word-processed essays, group work, electronic discussion boards, quizzes, and/or class exercises
Analyze, synthesize, summarize, and use sources responsibly	Word-processed essays, annotated bibliographies, group work, quizzes, reading journals, and/or class exercises
Prepare papers in a variety of academic genres, each focused on fulfilling a specific purpose	Word-processed essays, short writing assignments, and exams
Analyze written texts prior to revision, revise papers, and proofread for appropriate use of Standard American English	Peer reviews, drafts, exams, quizzes, and/or class exercises

V. Course Outline

A. Digital Environment
1. Electronic techniques for writing papers
2. Electronic techniques for in-class writing
3. Electronic techniques for revising writing
4. Electronic course platforms such as Blackboard

B. Academic Writing
1. Rhetorical situation
2. Summaries
3. Reading responses
4. Annotated bibliographies
5. Writing generated by specific purposes as selected from the following choices (generally, 3-4 per semester):
   a. Explanatory essays
   b. Analytical essays
   c. Persuasive essays
   d. Investigative essays
   e. Evaluative essays

f. Observational essays
g. Research-supported essays (400-800 words)

C. Basic Research Strategies
1. Libraries and databases
2. Internet sources
3. Source evaluation and information literacy
4. APA documentation

D. Conventions and Style of Standard American English
1. Structure
2. Correctness
3. Error patterns
4. Academic style

E. Revision
1. Drafting
a. Technology aids
b. Drafting and revising
2. Coherence and focus
3. Purpose
4. Editing and proofreading

VI. Suggested Texts

Hacker, D., & Sommers, N. (2012). *Rules for writers* (7th ed.). Boston, MA: Bedford.

Muller, G. H. (2013). *The McGraw-Hill reader: Issues across the disciplines* (12th ed.). Boston, MA: McGraw-Hill.

Reid, S. (2011). *The Prentice Hall guide for college writers* (9th ed.). Upper Saddle River, NJ: Prentice Hall.

VII. Bibliography

Addison, J., & McGee, S. J. (2010). Writing in high school /Writing in college: Research trends and future directions. *College Composition and Communication, 62*(1), 147-180.

Bateman, E. (2011). Teaching writing style and revision. *Teaching English in the Two Year College, 39*(1), 80-82.

Hjortshoi, K. (2009). *The transition to college writing* (2nd ed.). Boston, MA: Bedford.

Kellogg, R. T., & Raulerson, B. A., III. (2007). Improving the writing skills of college students. *Psychonomic Bulletin & Review, 14*(2), 237-245.

Menary, R. (2007). *Writing as thinking*. New South Wales, Australia: Department of Philosophy, The University of Wollongong.

Nussbaum, E. M., & Schraw, G. (2007). Promoting argument-counterargument integration in students' writing. *The Journal of Experimental Education, 76*(1), 59-123.

Patterson, J. J., & Duer, D. (2006). High school teaching and college expectations in writing and reading. *English Journal, 95*(3), 81-91.

Soles, D. (2005). An analysis of the style of exemplary first-year writing. *Teaching English in the Two Year College, 33*(1), 38-48.

Sommers, N., & Saltz, L. (2004). The novice as expert: Writing the freshman year. *College Composition and Communication, 56*(1), 124-150.

Stout, R. P. (2011). Teaching good writing, why bother? *Journal of College Science Teaching, 40*(6), 10-12.

Sullivan, P. (2003). What is "college-level" writing? *Teaching English in the Two Year College, 30*(4), 374-384.

Thomas, K. M., & Austin, M. (2005). Fun with fundamentals: Games and electronic activities to reinforce grammar in the college writing classroom. *Teaching English in the Two Year College, 33*(1), 62-70.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
CH College of Health	AJUS Division of Justice	Justice Center

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
JUST	A432	JUST A494C	3	(3+0)

6. Complete Course Title
Crime Analysis and Mapping

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats N/A Max Credits N/A

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Spring /2015 To: /9999

12. ☐ Cross Listed with N/A
☐ Stacked with N/A

Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 3/24/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 3/24/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☒ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Introduces analytical concepts and computer applications used in the study of temporal and spatial crime data. Demonstrates how these techniques can be used by justice agencies with a special emphasis given to police departments.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(JUST A200 and JUST A201) with a minimum grade of C.

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☒ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Completion of all GER Tier 1 (Basic College-Level Skills) courses; Junior or Senior standing

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Quantitative crime analysis is a vital part of evidence-based practice in modern criminal justice agencies. This course allows students to explore the analysis methods currently in use by agencies nationwide.

Initiator (faculty only) Date
Troy Payne
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Health
Course Content Guide

I. Date of Initiation: March 2014

II. Curriculum Action Request

A. School:	College of Health
B. Course Prefix:	JUST
C. Course Number:	A432
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Program:	Bachelor of Arts, Justice
G. Course Title:	Crime Analysis and Mapping
H. Grading Basis:	A-F
I. Implementation Date:	Spring/2015
J. Cross-listed/Stacked:	N/A
K. Course Description:	Introduces analytical concepts and computer applications used in the study of temporal and spatial crime data. Demonstrates how these techniques can be used by justice agencies with a special emphasis given to police departments.
L. Course Prerequisites:	(JUST A200 and JUST A201) with a minimum grade of C.
M. Course Co-requisites:	N/A
N. Other Restrictions:	Class
O. Registration Restrictions:	Completion of all GER Tier 1 (Basic College-Level Skills) courses; Junior or Senior standing
P. Course Fees:	Yes
Q. Course Attributes	General Education Requirement, Integrative Capstone

III. Instructional Goals and Student Learning Outcomes

A. The instructor will do the following in class:
   1. Review the theoretical and empirical literature regarding the distribution of criminal events across time and space.
   2. Demonstrate techniques and software applications used to analyze temporal and spatial crime data for meaningful patterns.
   3. Discuss presentation methods used to display temporal and spatial crime data.
   4. Explain the importance of data-driven methods in contemporary criminal justice practice.
   5. Discuss the importance of the target audience for shaping how temporal and spatial analyses are presented.

B. Student learning outcomes and assessment

Student Learning Outcomes and Assessment Measures		
Student Learning Outcomes	**Assessment Measures**	**Integrative Capstone goals**
1. Interpret maps and other analytical products.	Writing assignments, in-class discussion	Knowledge integration, critical thinking
2. Critique crime maps and other analytical products.	In-class discussion	Critical thinking, knowledge integration
3. Synthesize the criminological literature regarding crime and place.	Writing assignments, in-class discussion	Information literacy, critical thinking
4. Analyze spatial and temporal data using computer software.	Mapping assignments, data analysis assignments, in-class presentations	Quantitative perspectives, information literacy, critical thinking
5. Examine characteristics of crimes using computer software.	Writing assignments, in-class presentations	Quantitative perspectives, knowledge integration, critical thinking
6. Present maps and other analytical products to a variety of audiences orally and in writing.	Mapping assignments, data analysis assignments, in-class presentations, writing assignments	Effective communication, information literacy

IV. Course Level Justification

This course is designed to fulfill the Integrative Capstone requirement. The course advances the analysis, writing, and presentation skills previously acquired in Tier 1 GER courses and other Justice courses. Students will interpret and critique maps and analytical reports, and will create their own maps and analyses suitable for presentation in the style typical of a police department crime analyst. The structure and content of the course requires complex knowledge integration, critical thinking, information literacy, quantitative skills, and effective communication.

V. Topical Course Outline

1. Definition and typology of crime analysis
   1.1. Tactical and investigative crime analysis
   1.2. Strategic crime analysis
   1.3. Administrative crime analysis
2. Criminological foundations of crime analysis

- 2.1. Environmental criminology
- 2.2. Situational crime prevention
- 2.3. Problem-oriented policing
- 2.4. Crime displacement and diffusion of benefits

3. Data
   - 3.1. Data integrity
   - 3.2. Data generation processes and the importance of knowing where data come from
   - 3.3. Querying and joining data
   - 3.4. Formatting data for analysis
4. Statistics review
   - 4.1. Frequency distributions
   - 4.2. Crosstabulation
   - 4.3. Hypothesis testing
     - 4.3.1. Chi-square
     - 4.3.2. t-test
5. Geographic concepts
   - 5.1. Map projection
   - 5.2. Spatial autocorrelation
   - 5.3. The modifiable areal unit problem
6. Computer-based GIS introduction
   - 6.1. Displaying map data
     - 6.1.1. Vector data
     - 6.1.2. Raster data
   - 6.2. Symbology guidelines
   - 6.3. Querying map data
7. Analysis
   - 7.1. Distance analysis
   - 7.2. Temporal analysis
   - 7.3. Pattern identification
     - 7.3.1. Hotspots analysis
     - 7.3.2. Serial crimes
   - 7.4. Key characteristics of specific crime types
   - 7.5. The role of analysis in problem-oriented policing
8. Dissemination of analytical products
   - 8.1. Tactical vs. strategic vs. administrative analysis
   - 8.2. Consideration of audience
     - 8.2.1. General public
     - 8.2.2. Line-level officers and supervisors
     - 8.2.3. Command staff

VI. Suggested Texts

Boba, R. (2012). *Crime analysis with crime mapping (*3rd ed.). Thousand Oaks, CA: Sage.

Ormsby, T., Napoleon, E. J., Burke, R., Groessl, C., & Bowden, L. (2010). *Getting to know ArcGIS desktop (*2nd ed.). Redlands, CA: ESRI.

VII. Bibliography

Andresen, M. A., & Malleson, N. (2011). Testing the stability of crime patterns: Implications for theory and policy. *Journal of Research in Crime and Delinquency*, *48*(1), 58-82.

Bichler, G., Christie-Merrall, J., & Sechrest, D. (2011). Examining juvenile delinquency within activity space: Building a context for offender travel patterns. *Journal of Research in Crime and Delinquency*, *48*(3), 472-506.

*Braga, A. (2001). The effects of hot spots policing on crime. *The Annals of the American Academy of Political and Social Science*, 578, 104-126.

Braga, A., & Bond, B. J. (2008). Policing crime and disorder hot spots: A randomized controlled trial. *Criminology*, *46*(3), 577-607.

Braga, A. A., Hureau, D. M., & Papachristos, A. V. (2011). The relevance of micro places to citywide robbery trends: A longitudinal analysis of robbery incidents at street corners and block faces in Boston. *Journal of Research in Crime and Delinquency*, *48*(1), 7-32.

*Chainey, S., & Ratcliffe, J. (2005). *GIS and crime mapping*. West Sussex, England: John Wiley & Sons.

*Clarke, R. V., & Eck, J. E. (2005). *Crime analysis for problem solvers in 60 small steps*. Washington, DC: U.S. Department of Justice, Office of Community-oriented Policing Services. Retrieved from: http://www.cops.usdog.gov/pdf/CrimeAnalysis60Steps.pdf.

*Eck, J. E. (2002). Preventing crime at places. In L.W. Sherman, D. P. Farrington, B. C. Welsh, & D. L. MacKenzie (Eds.), *Evidence-Based Crime Prevention* (pp. 241-294). New York, NY: Routledge.

Groff, E. R., Weisburd, D., & Yang, S. M. (2010). Is it important to examine crime trends at a local “micro” level?: A longitudinal analysis of street to street variability in crime trajectories. *Journal of Quantitative Criminology*, *26*(1), 7-32.

Guerette, R. T., & Bowers, K. J. (2009). Assessing the extent of crime displacement and diffusion of benefits: A review of situational crime prevention evaluations. *Criminology*, *47*(4), 1331-1368.

Lum, C. (2008). The geography of drug activity and violence: Analyzing spatial relationships of non-homogenous crime event types. *Substance Use & Misuse*, *43*(2), 179.

*Monmonier, M. (1996). *How to lie with maps*. Chicago, IL: The University of Chicago Press.

Pitcher, A. B., & Johnson, S. D. (2011). Exploring theories of victimization using a mathematical model of burglary. *Journal of Research in Crime and Delinquency*, *48*(1), 83-109.

Reynald, D. M. (2011). Factors associated with the guardianship of places: Assessing the relative importance of the spatio-physical and sociodemographic contexts in generating opportunities for capable guardianship. *Journal of Research in Crime and Delinquency*, *48*(1), 110-142.

*Sherman, L.W., & Eck, J. E. (2002). Policing for crime prevention. In L. W. Sherman, D. P. Farrington, B. C. Welsh, & D. L. MacKenzie (Eds.), *Evidence-Based Crime Prevention* (pp. 295-329). New York, NY: Routledge.

Weisburd, D., Bernasco, W., & Bruinsma, G. J. N. (Eds.). (2009). *Putting crime in its place: Units of analysis in geographic criminology*. New York, NY: Springer.

*Denotes classic/seminal work

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A121	None	3.0	(3+0)

6. Complete Course Title
Small Animal Medicine
Small Animal Medicine
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 03/05/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Introduces the topics of small animal health and disease for dogs and cats. Covers preventive medicine and specific disease processes commonly encountered in veterinary practice and clinically relevant to veterinary technicians. Addresses vaccination protocols and nutrition.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A110, VTCH A111, VTCH A112, VTCH A112L, VTCH A113, and VTCH A113L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
None

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only)	Date	☐ Approved ☐ Disapproved Dean/Director of School/College	Date
Karen L. Carpenter, DVM Initiator (TYPE NAME)			
☐ Approved ☐ Disapproved Department Chair	Date	☐ Approved ☐ Disapproved Undergraduate/Graduate Academic Board Chair	Date
☐ Approved ☐ Disapproved College/School Curriculum Committee Chair	Date	☐ Approved ☐ Disapproved Provost or Designee	Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A121
D.	Credits/Contact Hours:	3.0 (3+0) Contact Hours
E.	Course Title:	Small Animal Medicine
F.	Grading:	A-F
G.	Implementation Date:	Spring 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Introduces the topics of small animal health and disease for dogs and cats. Covers preventive medicine and specific disease processes commonly encountered in veterinary practice and clinically relevant to veterinary technicians. Addresses vaccination protocols and nutrition.

K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A110, VTCH A111, VTCH A112, VTCH A112L, VTCH A113, and VTCH A113L) with a minimum grade of C
	ii. Co-requisites:	None
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification

This course builds on knowledge gained in VTCH A110, VTCH A111, VTCH A112, and VTCH A113.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Introduce the basic nutrients and describe the nutrient requirements of dogs and cats
- Discuss the history and regulation of pet foods, pet food labels, nutrient content, types of food, and pet food evaluation
- Describe feeding regimens for different life stages of dogs and cats
- Discuss nutritionally responsive disorders
- Use the systems approach to describe the clinical signs, diagnoses, and treatments of commonly encountered diseases of dogs and cats

- Discuss preventive medicine including immunity, vaccine types, and vaccination schedules in dogs and cats

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Demonstrate understanding of nutrients and describe the nutrient requirements of dogs and cats	Quizzes, written exams, class discussion, completion of Skills List* tasks
Describe dog and cat pet foods: history, regulation, labels, nutrient content, types, and evaluations	Class discussion, quizzes, field trips, written exams, completion of Skills List tasks
Demonstrate an understanding of nutrient requirements for various life stages of dogs and cats	Written assignments, quizzes, written exams, completion of Skills List tasks
Display an understanding of nutritionally responsive disorders	Written assignments, quizzes, written exams, completion of Skills List tasks
List the clinical signs, diagnoses, and treatments of commonly encountered dog and cat diseases	Quizzes, written exams, written client handouts, completion of Skills List tasks
Demonstrate understanding of preventive medicine in dogs and cats including immunity and vaccines and vaccination schedules	Quizzes, written exams, written client handouts, completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, written client education handouts, and written and practical exams.

VI. Topical Course Outline

A. Nutrition
   1. Basics of nutrition
   2. Nutrient requirements of dogs and cats
   3. Pet foods
   4. Evaluating pet foods
   5. Feeding for life stages
   6. Therapeutic nutrition

B. Health and Disease
   1. Responsibilities of the veterinary technician
   2. Client education
   3. Disease process

C. Systems Approach to Health and Disease

1. Respiratory diseases
2. Cardiovascular diseases
3. Digestive and hepatobiliary diseases
4. Urinary diseases
5. Endocrine diseases
6. Reproductive diseases
7. Immune-mediated diseases
8. Eye, ear, and integumentary diseases

D. Preventative Medicine
1. Life stage wellness visits
   a. Puppy and kitten patients
   b. Adult patients
   c. Geriatric patients
2. Immunity
3. Vaccines
4. Vaccine administration

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Case, L. P., Hayek, L. D., & Raasch, M. F. (2010). *Canine and feline nutrition: A resource for companion animal professionals* (3rd ed.). St. Louis, MO: Mosby.

Summers, A. (2013). *Common diseases of companion animals* (3rd ed.). St. Louis, MO: Elsevier.

VIII. Bibliography

Merrill, L. (2012). *Small animal internal medicine for veterinary technicians and nurses*. Hoboken, NJ: Wiley-Blackwell.

Nelson, R. W. (2009). *Small animal internal medicine* (4th ed.). Hoboken, NJ: Wiley-Blackwell.

Norsworthy, G. D. (2011). *The feline patient* (4th ed.). Hoboken, NJ: Wiley-Blackwell.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A122	None	3.0	(3+0)

6. Complete Course Title
Veterinary Surgical Nursing
Veterinary Surgical Nursing
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 03/05/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Covers nursing fundamentals used in common surgical procedures. Includes procedural management and instrument identification, care, and use. Emphasizes asepsis, surgical assistance, and patient management.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A102, VTCH A110, VTCH A111, VTCH A112, VTCH A112L, VTCH A113, and VTCHA113L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A122L

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A122
D.	Credits/Contact Hours:	3.0 (3+0) Contact Hours
E.	Course Title:	Veterinary Surgical Nursing
F.	Grading:	A-F (Must pass VTCH A122L with a minimum grade of C to pass VTCH A122)
G.	Implementation Date:	Spring 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Covers nursing fundamentals used in common surgical procedures. Includes procedural management and instrument identification, care, and use. Emphasizes asepsis, surgical assistance, and patient management.

K.	Course Attributes:		Not applicable
L.	Course Requirements:		
	i.	Prerequisites:	(VTCH A102, VTCH A110, VTCH A111, VTCH A112, VTCH A112L, VTCH A113, and VTCHA113L) with a minimum grade of C
	ii.	Co-requisites:	VTCH A122L
	iii.	Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:		Yes

III. Course Level Justification
This course builds on the basic nursing skills taught in VTCH A113.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Present instruments, equipment, drapes, gowns, and suture material used during common surgical procedures and discuss use and care
- Describe routine surgical procedures and related equipment
- Explain all aspects of patient management related to common surgical procedures for a variety of species
- Describe preparation of surgical suite
- Describe patient surgical site preparation, positioning, monitoring, and post-operative care

- Discuss proper aseptic technique during patient and surgical team preparation, operating room procedures, and postoperative care
- Present proper post-surgical equipment and surface cleaning and sterilization methods

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Properly identify common surgical, anesthetic, and monitoring instruments, drapes, gowns, and suture material and demonstrate knowledge of use and care	Class participation, role-playing, demonstration, written assignments, quizzes, written and practical exams, and completion of Skills List* tasks
Demonstrate knowledge of routine surgical procedures and related equipment	Class participation, written assignments, quizzes, written exams, and completion of Skills List tasks
Demonstrate a knowledge and integration of all aspects of patient management for common surgical procedures for a variety of species, including patient and surgical site preparation, positioning, monitoring, and post-operative care	Class participation, role-playing, discussion, demonstration, written assignments, quizzes, written and practical exams, and completion of Skills List tasks
Explain how to provide the appropriate instruments, supplies, surgical assistance, and environment for maintaining asepsis during surgical procedures	Role-playing, discussion, demonstration, written assignments, quizzes, exams, and completion of Skills List tasks
Describe the proper procedures for cleaning and sterilizing post-surgical equipment and surfaces	Written assignments, quizzes, exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, homework, class participation, and exams.

VI. Topical Course Outline

A. Instrumentation
   1. General surgery instruments and supplies
   2. Care and use of surgical instruments, equipment, and supplies
   3. Drapes, gowns, masks, and gloves
   4. Suture materials

B. Procedural Management
   1. Sterilization
   2. Operating room preparation

3. Small animal patient preparation
4. Surgical team preparation
5. Post-surgical clean-up

C. Surgical Assistance
1. Proper operating room conduct
2. Proper aseptic technique
3. Routine surgical procedures and related equipment
4. Assistance with care of exposed tissues and organs
5. Techniques for passing instruments and supplies
6. Operation and maintenance of surgical equipment
7. Documentation and operative records

D. Patient Management
1. Patient assessment
2. Patient monitoring
3. Medical records and consent forms
4. Post-operative care

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Bauer, M. (2010). *The veterinary technician's pocket partner.* Clifton Park, NY: Cengage Learning.

Crow, S. E., Walshaw, S. O., & Boyle, J. E. (2009). *Manual of clinical procedures in dogs, cats, rabbits, & rodents* (3rd ed.). Ames, IA: Wiley-Blackwell.

Sonsthagen, T. F. (2014). *Veterinary instruments and equipment: A pocket guide* (3rd ed.). St. Louis, MO: Elsevier Mosby.

Tear, M. (2012). *Small animal surgical nursing skills and concepts* (2nd ed.). St. Louis, MO: Elsevier.

VIII. Bibliography

Animal Care Technologies. (2014). *Animal care training*. Available from http://www.4act.com/training

Jack, C. M., Watson, P. M., & Donovan, M. S. (2008). *Veterinary technician's daily reference guide: Canine and feline* (2nd ed.). Ames, IA: Blackwell Publishing.

Marshall, G. E. (2011). *Companion-animal dental and surgical instruments.* Lakewood, CO: AAHA Press.

Pattengale, P. (2009). *Tasks for the veterinary assistant* (2nd ed.). Ames, IA: Wiley-Blackwell.

Rockett, J. (2013). *The veterinary technician's guide to writing SOAPS.* Caldwell, ID: Rockett House Publishing.

Vanhorn, B., & Clark, R. W. (2011). *Veterinary assisting fundamentals & applications.* Clifton Park, NY: Cengage Learning.

Wuestenberg, K. (2012). *Clinical small animal care.* Ames, IA: Wiley-Blackwell.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A122L	None	1.0	(0+3)

6. Complete Course Title
Veterinary Surgical Nursing Laboratory
Vet Surgical Nursing Lab
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 03/05/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Applies nursing fundamentals used in common surgical procedures. Includes procedural management and instrument identification, care, and use. Emphasizes asepsis, surgical assistance, and patient management.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A102, VTCH A110, VTCH A111, VTCH A112, VTCH A112L, VTCH A113, and VTCHA113L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A122

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A122L
D.	Credits/Contact Hours:	1.0 (0+3) Contact Hours
E.	Course Title:	Veterinary Surgical Nursing Laboratory
F.	Grading:	A-F (Must pass with a minimum grade of C to receive credit for VTCH A122)
G.	Implementation Date:	Spring 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Applies nursing fundamentals used in common surgical procedures. Includes procedural management and instrument identification, care, and use. Emphasizes asepsis, surgical assistance, and patient management.

K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A102, VTCH A110, VTCH A111, VTCH A112, VTCH A112L, VTCH A113, and VTCHA113L) with a minimum grade of C
	ii. Co-requisites:	VTCH A122
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification
This course is the laboratory component of VTCH A122.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Display instruments, equipment, drapes, gowns, and suture material used during common surgical procedures and demonstrate use and care
- Provide participation in routine surgical procedures and use and operation of related equipment
- Demonstrate all aspects of patient management for common surgical procedures for a variety of species, including patient and surgical site preparation, positioning, monitoring, and post-operative care
- Model proper aseptic technique during patient and surgical team preparation and operating room procedures

- Show how to properly clean and sterilize post-surgical equipment and surfaces

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Use common surgical, anesthetic, and monitoring instruments, drapes, gowns, and suture material and show proper use and care	Class participation and demonstration, laboratory assignments, quizzes, practical exams, and completion of Skills List* tasks
Display proper surgical nursing skills during routine surgical procedures and use of related equipment	Class participation, laboratory assignments, quizzes, practical exams, and completion of Skills List tasks
Demonstrate all aspects of patient management for common surgical procedures for a variety of species, including patient and surgical site preparation, positioning, monitoring, and post-operative care	Class participation discussion, assignments, quizzes, exams, and completion of Skills List tasks
Provide the appropriate instruments, supplies, and surgical assistance and maintain an aseptic environment during surgical procedures	Class participation, demonstration, laboratory assignments, quizzes, practical exams, and completion of Skills List tasks
Demonstrate proper cleaning and sterilization of post-surgical equipment and surfaces	Class participation, practical exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, homework, class participation, and exams.

VI. Topical Course Outline

A. Instrumentation
   1. General surgery instruments and supplies
   2. Care and use of surgical instruments, equipment, and supplies
   3. Drapes, gowns, masks, and gloves
   4. Suture materials

B. Procedural Management
   1. Sterilization
   2. Operating room preparation
   3. Small animal patient preparation
   4. Surgical team preparation
   5. Post-surgical clean-up

C. Surgical Assistance
   1. Proper operating room conduct
   2. Proper aseptic technique
   3. Routine surgical procedures and related equipment

4. Assistance with care of exposed tissues and organs
5. Techniques for passing instruments and supplies
6. Operation and maintenance of surgical equipment
7. Documentation and operative records

D. Patient Management
1. Patient assessment
2. Patient monitoring
3. Medical records and consent forms
4. Post-operative care

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Bauer, M. (2010). *The veterinary technician's pocket partner.* Clifton Park, NY: Cengage Learning.

Crow, S. E., Walshaw, S. O., & Boyle, J. E. (2009). *Manual of clinical procedures in dogs, cats, rabbits, & rodents* (3rd ed.). Ames, IA: Wiley-Blackwell.

Sonsthagen, T. F. (2014). *Veterinary instruments and equipment: A pocket guide* (3rd ed.). St. Louis, MO: Elsevier Mosby.

Tear, M. (2012). *Small animal surgical nursing skills and concepts* (2nd ed.). St. Louis, MO: Elsevier.

VIII. Bibliography

Animal Care Technologies. (2014). *Animal care training*. Available from http://www.4act.com/training

Jack, C. M., Watson, P. M., & Donovan, M. S. (2008). *Veterinary technician's daily reference guide: Canine and feline* (2nd ed.). Ames, IA: Blackwell Publishing.

Marshall, G. E. (2011). *Companion-animal dental and surgical instruments.* Lakewood, CO: AAHA Press.

Pattengale, P. (2009). *Tasks for the veterinary assistant* (2nd ed.). Ames, IA: Wiley-Blackwell.

Rockett, J. (2013). *The veterinary technician's guide to writing SOAPS.* Caldwell, ID: Rockett House Publishing.

Vanhorn, B., & Clark, R. W. (2011). *Veterinary assisting fundamentals & applications.* Clifton Park, NY: Cengage Learning.

Wuestenberg, K. (2012). *Clinical small animal care.* Ames, IA: Wiley-Blackwell.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A130	None	1.0	(1+0)

6. Complete Course Title
Applied Small Animal Behavior I
Applied Sm Animal Behavior I
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 03/31/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Introduces natural history and developmental behavior of dogs and cats, principles of learning theory, and practical applications to behavior modification. Applies specific behavior modification techniques to developing written client education handouts.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
None

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A130
D.	Credits/Contact Hours:	1.0 (1+0) Contact Hours
E.	Course Title:	Applied Small Animal Behavior I
F.	Grading:	A-F
G.	Implementation Date:	Fall 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Introduces natural history and developmental behavior of dogs and cats, principles of learning theory, and practical applications to behavior modification. Applies specific behavior modification techniques to developing written client education handouts.

K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C
	ii. Co-requisites:	None
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification

This course introduces the principles of learning as applied to dog and cat behaviors.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Explain natural history, domestication, and social organization of dogs and cats
- Describe behavior and communication methods of dogs and cats
- Discuss olfactory, auditory, and visual communication behaviors and relate them to predatory feeding behaviors
- Explain the principles and applications of learning theory for training and behavior modification
- Discuss behavioral problem prevention for puppies and kittens
- Explain how to teach dogs and cats desirable behaviors

- Provide opportunity for supervised behavior modification work with dogs and cats
- Describe development of client handouts on resolving common problem behaviors of dogs and cats
- Provide guidance and feedback on student-produced client education handouts

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Demonstrate knowledge of natural history, domestication, and social organization of dogs and cats	Written assignments, quizzes, and exams
Explain behavior and communication methods of dogs and cats	Written assignments, quizzes, and exams
Describe olfactory, auditory, and visual communication behaviors and relate them to predatory feeding behaviors of dogs and cats	Written assignments, quizzes, and exams
Explain the principles of learning theory and the practical application of that theory for training and behavior modification	Written assignments, class discussion, role playing, class demonstration, quizzes, and exams
Apply learning theory to teach desirable behaviors to dogs and cats	Field trips, role playing, written assignments, and class participation
Explain common problem behaviors of and modification techniques for dogs and cats	Written assignments, quizzes, and exams
Apply behavior modification techniques to problem behaviors commonly encountered in dogs and cats	Field trips, role playing, and class participation
Develop client education handouts	Written assignments

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this program and possibly this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class participation, and exams.

VI. Topical Course Outline

A. Domestication of Dogs and Cats
   1. Evolutionary history and taxonomy
   2. Natural selection and its effect on domestication
   3. Social groups of dogs and cats
   4. Breed specific behaviors

B. Communication in Dogs and Cats
   1. Olfactory communication
   2. Auditory signals
   3. Visual signals

C. Principles of Learning Theory
   1. Classical conditioning
   2. Operant conditioning
   3. Instrumental learning
   4. Reinforcement vs. punishment
   5. Reinforcing stimuli for dogs and cats
   6. Primary and secondary reinforcements
   7. Habituation and sensitization
   8. Positive vs. aversive behavior control
D. Practical Applications: Training Preparations
   1. Identify objectives and goals
   2. Select training program or behavior modification technique
   3. Develop training schedule
   4. Evaluate progress
E. Practical Applications: Getting Started
   1. Selecting primary and secondary reinforcements
   2. Timing and schedule of reinforcement
   3. Shaping (successive approximation)
   4. Behavior chains and Premack principle
F. Problem Prevention and Training for Puppies and Kittens
   1. Socialization
   2. House and litter box training
   3. Gentle play behavior in puppies and kittens
   4. Introducing puppies and kittens to other pets
G. Teaching Dogs and Cats Good Manners
   1. Dog: sit, down, stay, wait, walk on loose lead, come when called
   2. Cat: use specific sleeping areas, come when called
H. Clinical Application for Veterinary Technicians
   1. Written communication through handout development
   2. Oral communication through role playing and volunteer work

VII. Suggested Text(s)

Case, L. P. (2009). *Canine and feline behavior and training: A complete guide to understanding our two best friends*. Clifton Park, NY: Delmar, Cengage Learning.

VIII. Bibliography

Case, L. P. (2005). *The dog: Its behavior, nutrition and health* (2nd ed.). Ames, IA: Blackwell Publishing.

Case, L. P. (2003). *The cat: Its behavior, nutrition, and health.* Ames, IA: Blackwell Publishing.*

Coppinger, R., & Coppinger, L. (2002). *Dogs: A new understanding of canine origin, behavior and evolution.* Chicago, IL: University of Chicago Press.*

Overall, K. (1997). *Clinical behavioral medicine for small animals.* St. Louis, MO: Mosby.*

Public Broadcasting System. (Producer). (2007). *Nature: Dogs that changed the world* [DVD]. Available from http://www.questarentertainment.com

Pryor, K. (1995). *Don't shoot the dog.* New York, NY: Bantam Books.*

Yin, S. (2010). *How to behave so your dog behaves* (2nd ed.). Neptune, NJ: T.F.H. Publications.

Yin, S. (2009). *Low stress handling, restraint and behavior modification of dogs and cats: Techniques for developing patients who love their visits*. Davis, CA: Cattle Dog Publishing.

*Classic text

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A195	None	3.0	(0+9)

6. Complete Course Title
Clinical Externship I
Clinical Externship I
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/11/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Provides guided learning experience in a veterinary clinical setting. Applies veterinary technology theory and skills acquired during first year of VTCH courses.
Special note: Requires 45 hours of work experience for each credit (135 approved hours).

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, and VTCH A223L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
None

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved
Dean/Director of School/College Date

☐ Approved
☐ Disapproved
Department Chair Date

☐ Approved
☐ Disapproved
Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved
College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved
Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A195
D.	Credits/Contact Hours:	3.0 (0+9) Contact Hours
E.	Course Title:	Clinical Externship I
F.	Grading:	A-F
G.	Implementation Date:	Summer 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Provides guided learning experience in a veterinary clinical setting. Applies veterinary technology theory and skills acquired during first year of VTCH courses.
Special note: Requires 45 hours of work experience for each credit (135 approved hours).

K.	Course Attributes:		Not applicable
L.	Course Requirements:		
	i.	Prerequisites:	(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, and VTCH A223L) with a minimum grade of C
	ii.	Co-requisites:	None
	iii.	Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:		Yes

III. Course Level Justification
Intermediate-level course requiring knowledge and skills acquired in first-year veterinary technology curricula.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Explain course and faculty expectations including attendance, time-log maintenance, journaling, communication, professionalism, ambassadorship, dress, appearance, and confidentiality
- Review student clinical skills self-assessment forms
- Query students regarding externship expectations and concerns
- Describe safety and risk-management procedures including incident report submission, insurance coverage, and medical-care protocol for externship incidents

- Provide an opportunity for applying theoretical knowledge and acquired skills in a veterinary facility
- Coordinate with externship supervisor to ensure that student works out a learning agreement, is informed of externship supervisor expectations, and develops a work schedule
- Provide an opportunity for real-world learning regarding expectations for veterinary technicians in a practice setting
- Orchestrate ongoing communication among faculty, externship supervisors, and students concerning workplace performance and challenges
- Provide opportunity for students to share workplace experiences
- Monitor and mentor student performance during externship
- Provide opportunity for final work-performance evaluations and students' evaluations of experiences and externship sites

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Describe and model course and faculty expectations including attendance, time-log maintenance, journaling, communication, professionalism, ambassadorship, dress, appearance, and confidentiality	Written and oral assignments, quizzes, exams, and externship supervisor evaluation
Complete clinical skills self-assessment before and after externship	Clinical skills self-assessment
Explain safety and risk-management procedures including incident report submission, insurance coverage, and medical-care protocol for externship incidents	Written and oral assignments, quizzes, and exams
Describe externship supervisor expectations	Class discussion
Apply theoretical knowledge and acquired skills in a veterinary facility	Externship supervisor evaluation, and possible completion of Skills List* tasks
Apply veterinary technician skills in a real-world setting	Class participation, journaling, externship supervisor evaluation, and possible completion of Skills List tasks
Communicate workplace performance and challenges to faculty and externship supervisors	Journaling, oral assignments, and externship site evaluation
Discuss workplace experiences in a group setting	Class participation and written and oral assignments
Perform veterinary technician duties as assigned by externship supervisor	Externship supervisor evaluation and possible completion of Skills List tasks
Identify strengths, weaknesses, and lessons learned	Self-reflection

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for the program and a possible assessment tool for this course dependent on availability of program instructors for evaluation of skills. Other assessment tools are at the instructor's discretion and may include class participation; attendance; written and oral assignments; quizzes; exams; student self-assessment; and externship supervisor evaluation of work habits, attitude, appearance, professionalism, demonstration, and competency of skills.

VI. Topical Course Outline

A. Externship Orientation
   1. Externship site selection and placement
   2. Course and faculty expectations
      a. Attendance and professionalism
      b. Ambassadorship
      c. Dress and appearance
      d. Confidentiality
      e. Student self-assessment of competence level before and after externship
      f. Time-log maintenance
      g. Journaling
      h. Communication with other students
   3. Communication essential to successful relationship among faculty, externship supervisors, and students
   4. Student concerns and expectations
   5. Safety and risk management

B. Placement in a Veterinary Facility
   1. Initial interview process
   2. Learning agreement
   3. Externship supervisor expectations
   4. Work schedule

C. Continuing Communication among Faculty, Externship Supervisors, and Students Regarding Workplace Performances and Challenges

D. Student Sharing of Workplace Experiences

E. Student Observation and Practice of Fundamental Skills Learned to Date
   1. Veterinary technician skills
   2. Facility management skills
   3. Ethical and legal conduct

F. Final Evaluation of Work Performance and Externship Experience
   1. Areas of strength
   2. Areas needing improvement
   3. Lessons learned

VII. Suggested Text(s)

Bauer, M. (2010). *The veterinary technician's pocket partner.* Clifton Park, NY: Delmar, Cengage Learning.

VIII. Bibliography

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Crow, S. E., Walshaw, S. O., & Boyle, J. E. (2009). *Manual of clinical procedures in dogs, cats, rabbits, & rodents* (3rd ed.). Ames, IA: Wiley-Blackwell.

Jack, C. M., Watson, P. M., & Donovan, M. S. (2008). *Veterinary technician's daily reference guide: Canine and feline* (2nd ed.). Ames, IA: Wiley-Blackwell.

Pattengale, P. (2009). *Tasks for the veterinary assistant* (2nd ed.). Hoboken, NJ: Wiley-Blackwell.

Plumb, D. C. (2011). *Plumb's veterinary drug handbook* (7th ed.). Ames, IA: Wiley-Blackwell.

Prendergast, H. (2010). *Front office management for the veterinary team*. St. Louis, MO: Elsevier.

Romich, J. A. (2010). *Fundamentals of pharmacology for veterinary technicians* (2nd ed.). Clifton Park, NY: Cengage Learning.

Sirois, M. (2013). *Mosby's veterinary pdq* (2nd ed.). St. Louis, MO: Elsevier.

Tear, M. (2012). *Small animal surgical nursing skills and concepts* (2nd ed.). St. Louis, MO: Elsevier.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A223	None	3.0	(3+0)

6. Complete Course Title
Veterinary Microbiology and Parasitology
Vet Micro and Parasitology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 03/27/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Introduces clinical veterinary microbiology and parasitology, zoonotic diseases, and veterinary public health.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A110, VTCH A111, VTCH A112, VTCH A112L, VTCH A113, and VTCH A113L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH 223L

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A223
D.	Credits/Contact Hours:	3.0 (3+0) Contact Hours
E.	Course Title:	Veterinary Microbiology and Parasitology
F.	Grading:	A-F (Must pass VTCH A223L with a minimum grade of C to pass VTCH A223)
G.	Implementation Date:	Spring 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable
J.	Course Description:	
	Introduces clinical veterinary microbiology and parasitology, zoonotic diseases, and veterinary public health.	
K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A110, VTCH A111, VTCH A112, VTCH A112L, VTCH A113, and VTCH A113L) with a minimum grade of C
	ii. Co-requisites:	VTCH A223L
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification

This course builds on information taught in previous VTCH A100 level courses.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:

The instructor will:

- Introduce students to the characteristics of viral, bacterial, and fungal organisms commonly seen in small and large animal veterinary practices
- Discuss staining procedures; tests for identifying common viral, bacterial, and fungal pathogens encountered in small and large animal practices; and collecting and handling specimens
- Describe the different types of culture media used in veterinary medicine and the procedures used for inoculation
- Describe methods for incubating inoculated culture media
- Discuss methods commonly used to test for viruses
- Describe nosocomial infections, common nosocomial agents, and procedures to prevent and control them

- Discuss zoonoses, common zoonotic infectious agents, and methods for prevention and control
- Discuss the common endoparasites and ectoparasites of domestic animals: common names, affected hosts, key clinical signs, life cycles, zoonotic potential, treatments, and prevention and control methods
- Describe methods for collecting and handling specimens used for identifying common animal endoparasites and ectoparasites
- Discuss veterinary public health issues and disease prevention including food-borne pathogens and the epidemiology of potential animal-borne pathogens
- Describe disease outbreak surveillance and control measures

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Demonstrate knowledge of the characteristics of viral, bacterial, and fungal organisms commonly seen in veterinary practices	Written assignments, quizzes, exams, and completion of Skills List* tasks
Explain methods for collecting, handling, and evaluating samples used to identify common viral, bacterial, and fungal pathogens encountered in veterinary practices	Assignments, projects, quizzes, exams, and completion of Skills List tasks
Exhibit understanding of different types of culture media used in veterinary medicine and the procedures for inoculation	Class discussion, written assignments, quizzes, written and practical exams, and completion of Skills List tasks
Demonstrate knowledge of the methods for incubating inoculated culture media	Quizzes, assignments, exams, and completion of Skills List tasks
Display understanding of methods commonly used to test for viruses	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Demonstrate knowledge of nosocomial infections, common nosocomial agents, and procedures for prevention and control	Class participation, written assignments, quizzes, written and practical exams, and completion of Skills List tasks
Describe zoonoses, common zoonotic infectious agents, and zoonotic prevention and control	Written assignments, quizzes, exams, and completion of Skills List tasks
Display knowledge of common endoparasites and ectoparasites of domestic animals and mechanisms for causing disease	Class discussion, written assignments/projects, quizzes, exams, and completion of Skills List tasks
Explain methods for collecting and handling specimens used for identifying common animal endoparasites and ectoparasites	Class discussion, handouts, quizzes, exams, and completion of Skills List tasks
Demonstrate understanding of veterinary public health issues and disease prevention including food-borne pathogens and potential animal-borne pathogens	Quizzes, exams, and completion of Skills List tasks

Explain disease outbreak surveillance and control measures	Class participation and discussion, disease outbreak surveillance exercises/problems, quizzes, exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class participation, role-playing exercises, and exams.

VI. Topical Course Outline

A. Diagnostic Methods
   1. Culture systems
   2. Immunohistochemical assays
   3. Polymerase chain reactions

B. Specimen Collection
   1. Methods
   2. Appropriate collection devices
   3. Sites and timing of sample collection
   4. Labeling requirements
   5. Microorganisms requiring special collecting and handling
   6. Processing specimens

C. Bacterial Isolation and Identification Procedures
   1. Culture media and inoculation techniques
   2. Incubation conditions
   3. Identification procedures such as gram staining and commercial kits
   4. Urine cultures

D. Common Bacterial Species
   1. Gram-positive and anaerobic cocci
   2. Gram-positive rods
   3. Gram-negative bacteria
   4. Spirochetes and curved bacteria
   5. Mycoplasma species

E. Mycology
   1. Specimen collection, examination, and culture
   2. Systemic mycoses
   3. Yeasts

F. Virology
   1. Viral pathogens
   2. Isolation
   3. Antigen detection

G. Serology
   1. Antibody response to infection
   2. Collection of serum
   3. Test procedures
   4. Interpretation of test results
H. Nosocomial Infections
   1. Agents
   2. Recognition and control of infections
   3. Antiseptics, disinfectants, and sterilization
   4. Biological safety
I. Parasitology
   1. Endoparasites of domestic animals
      a. Common names and affected species
      b. Life cycles and zoonotic potential
      c. Key clinical signs
      d. Methods of diagnosis
         1) Collection, storage, and safe examination of fecal samples
         2) Fecal float, smear, and SNAP® tests
         3) Blood samples
      e. Treatments
   2. Ectoparasites of domestic animals
      a. Common names and affected species
      b. Life cycles and zoonotic potential
      c. Key clinical signs
      d. Methods of diagnosis
      e. Treatments
J. Zoonotic Diseases
   1. Common zoonotic diseases seen in veterinary medicine
   2. Viral pathogens
   3. Bacterial infections
   4. Internal parasites
   5. Protozoal infections
   6. External parasites
K. Public Health
   1. Food-borne diseases
   2. Monitoring and surveillance
   3. Antimicrobial resistance
   4. Laboratory animal facilities
   5. Diagnostic laboratories
   6. Biomedical research
   7. Public health education and community extension

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Foreyt, B. (2001). *Veterinary parasitology: Reference manual* (5th ed.). Hoboken, NJ: Wiley- Blackwell.*

McVey, D. S., Kennedy, M., & Chengapa, M. M. (2013). *Veterinary microbiology* (3rd ed.). Hoboken, NJ: Wiley-Blackwell.

VIII. Bibliography

Colville, J., & Berryhill, D. (2007). *Handbook of zoonoses: Identification and prevention.* St. Louis, MO: Mosby.

Hendrix, C. M., & Robinson, E. (2011). *Diagnostic parasitology for veterinary technicians* (3rd ed.). St. Louis, MO: Mosby.

Ikram, M., & Hill, E. (1994). *Microbiology for veterinary technicians.* St. Louis, MO: Mosby.*

Rabinowitz, P. M., & Conti, L. A. (2009). *Human-animal medicine: Clinical approaches to zoonoses, toxicants and other shared health risks*. Philadelphia, PA: Saunders.

Trevejo, R. (2009). *Veterinary public health, an issue of veterinary clinics: Small animal practice.* Philadelphia, PA: Saunders.

*Classic text

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A223L	None	1.0	(0+3)

6. Complete Course Title
Veterinary Microbiology and Parasitology Laboratory
Vet Micro and Parasitology Lab
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 03/27/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Applies the fundamentals of specimen collecting, handling, and testing in clinical veterinary microbiology and parasitology, zoonotic diseases, and veterinary public health.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A110, VTCH A111, VTCH A112, VTCH A112L, VTCH A113, and VTCH A113L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH 223

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A223L
D.	Credits/Contact Hours:	1.0 (0+3) Contact Hours
E.	Course Title:	Veterinary Microbiology and Parasitology Laboratory
F.	Grading:	A-F (Must pass with a minimum grade of C to receive credit for VTCH A223)
G.	Implementation Date:	Spring 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable
J.	Course Description:	
	Applies the fundamentals of specimen collecting, handling, and testing in clinical veterinary microbiology and parasitology, zoonotic diseases, and veterinary public health.	
K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A110, VTCH A111, VTCH A112, VTCH A112L, VTCH A113, and VTCH A113L) with a minimum grade of C
	ii. Co-requisites:	VTCH A223
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification

This course is the laboratory component of VTCH A223 and builds on previous 100-level laboratory courses.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:

The instructor will:

- Show students the characteristics of and how to identify viral, bacterial, and fungal organisms commonly seen in small and large animal veterinary practices
- Model methods for collecting and handling specimens, staining procedures, and tests used for the identification of common viral, bacterial, and fungal pathogens encountered in small and large animal practices
- Show the different types of culture media used in veterinary medicine and demonstrate the procedures used for their inoculation

- Demonstrate methods for incubating and inoculating culture media
- Show methods commonly used to test for viruses
- Display common nosocomial agents and demonstrate procedures to prevent and control them
- Show common zoonotic infectious agents and demonstrate methods for prevention and control
- Display the common endoparasites and ectoparasites of domestic animals: common names, affected hosts, key clinical signs, life cycles, zoonotic potential, treatments, and prevention and control methods
- Demonstrate and model safe methods for collecting and handling specimens used for identifying common animal endoparasites and ectoparasites
- Present food-borne pathogens and potential animal-borne pathogens and demonstrate and describe their epidemiology
- Demonstrate disease outbreak surveillance and control measures

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Identify viral, bacterial, and fungal organisms commonly seen in veterinary practices and describe their characteristics	Laboratory projects, quizzes, exams, and completion of Skills List* tasks
Demonstrate methods for collecting, handling, and evaluating samples used to identify common viral, bacterial, and fungal pathogens encountered in veterinary practices	Laboratory assignments, quizzes, written and practical exams, and completion of Skills List tasks
Identify different types of culture media used in veterinary medicine and demonstrate procedures for inoculation	Class participation, laboratory assignments, quizzes, written and practical exams, and completion of Skills List tasks
Demonstrate methods for incubating inoculated culture media	Laboratory exercises, quizzes, exams, and completion of Skills List tasks
Identify and explain methods commonly used to test for viruses	Laboratory assignments, quizzes, practical exams, and completion of Skills List tasks
Identify and describe common nosocomial agents, and demonstrate procedures for preventing and controlling them	Laboratory assignments, quizzes, practical exams, and completion of Skills List tasks
Identify and describe common zoonotic infectious agents, and show methods of prevention and control	Research projects, quizzes, written and practical exams, and completion of Skills List tasks
Identify common endoparasites and ectoparasites of domestic animals and explain mechanisms for causing disease	Laboratory assignments, quizzes, written and practical exams, and completion of Skills List tasks
Demonstrate safe methods for collecting and handling specimens used for identifying common animal endoparasites and ectoparasites	Laboratory assignments, quizzes, written and practical exams, and completion of Skills List tasks

Identify potential food-borne and animal-borne pathogens and demonstrate and describe related epidemiology	Laboratory assignments, quizzes, written and practical exams, and completion of Skills List tasks
Demonstrate disease outbreak surveillance and control measures	Disease outbreak surveillance exercises, quizzes, written and practical exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, laboratory written, laboratory, and oral assignments, class participation, and written and practical exams.

VI. Topical Course Outline

A. Diagnostic Methods
   1. Culture systems
   2. Immunohistochemical assays
   3. Polymerase chain reactions

B. Specimen Collection
   1. Methods
   2. Appropriate collection devices
   3. Sites and timing of sample collection
   4. Labeling requirements
   5. Microorganisms requiring special collecting and handling
   6. Processing specimens

C. Bacterial Isolation and Identification Procedures
   1. Culture media and inoculation techniques
   2. Incubation conditions
   3. Identification procedures such as gram staining and commercial kits
   4. Urine cultures

D. Common Bacterial Species
   1. Gram-positive and anaerobic cocci
   2. Gram-positive rods
   3. Gram-negative bacteria
   4. Spirochetes and curved bacteria
   5. Mycoplasma species

E. Mycology
   1. Specimen collection, examination, and culture
   2. Systemic mycoses
   3. Yeasts

F. Virology
   1. Viral pathogens
   2. Isolation

3. Antigen detection

G. Serology
1. Antibody response to infection
2. Serum collection
3. Test procedures
4. Interpretation of test results

H. Nosocomial Infections
1. Agents
2. Recognition and control of infections
3. Antiseptics, disinfectants, and sterilization
4. Biological safety

I. Parasitology
1. Endoparasites of domestic animals
   a. Common names and affected species
   b. Life cycles and zoonotic potential
   c. Key clinical signs
   d. Methods of diagnosis
      1) Collection, storage, and safe examination of fecal samples
      2) Fecal float, smear, and SNAP® tests
      3) Blood samples
   e. Treatments
2. Ectoparasites of domestic animals
   a. Common names and affected species
   b. Life cycles and zoonotic potential
   c. Key clinical signs
   d. Methods of diagnosis
   e. Treatments

J. Zoonotic Diseases
1. Common zoonotic diseases seen in veterinary medicine
2. Viral pathogens
3. Bacterial infections
4. Internal parasites
5. Protozoal infections
6. External parasites

K. Public Health
1. Food-borne diseases
2. Monitoring and surveillance
3. Antimicrobial resistance
4. Laboratory animal facilities
5. Diagnostic laboratories
6. Biomedical research
7. Public health education and community extension

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Foreyt, B. (2001). *Veterinary parasitology: Reference manual* (5th ed.). Hoboken, NJ: Wiley- Blackwell.*

McVey, D. S., Kennedy, M., & Chengapa, M. M. (2013). *Veterinary microbiology* (3rd ed.). Hoboken, NJ: Wiley-Blackwell.

VIII. Bibliography

Colville, J., & Berryhill, D. (2007). *Handbook of zoonoses: Identification and prevention.* St. Louis, MO: Mosby.

Hendrix, C. M., & Robinson, E. (2011). *Diagnostic parasitology for veterinary technicians* (3rd ed.). St. Louis, MO: Mosby.

Ikram, M., & Hill, E. (1994). *Microbiology for veterinary technicians.* St. Louis, MO: Mosby.*

Rabinowitz, P. M., & Conti, L. A. (2009). *Human-animal medicine: Clinical approaches to zoonoses, toxicants and other shared health risks*. Philadelphia, PA: Saunders.

Trevejo, R. (2009). *Veterinary public health, an issue of veterinary clinics: Small animal practice.* Philadelphia, PA: Saunders.

*Classic text

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A231	None	2.0	(2+0)

6. Complete Course Title
Veterinary Diagnostic Imaging and Dentistry
Vet Diag Imaging and Dentistry
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 03/31/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Introduces theories and principles of diagnostic imaging and dentistry techniques used in veterinary medicine. Discusses safe procedures for producing quality radiographs. Explains dentistry evaluation, diagnostics, and prophylaxis in small animals.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A231L

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A231
D.	Credits/Contact Hours:	2.0 (2+0) Contact Hours
E.	Course Title:	Veterinary Diagnostic Imaging and Dentistry
F.	Grading:	A-F (Must pass VTCH A231L with a minimum grade of C to pass VTCH A231)
G.	Implementation Date:	Fall 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Introduces theories and principles of diagnostic imaging and dentistry techniques used in veterinary medicine. Discusses safe procedures for producing quality radiographs. Explains dentistry evaluation, diagnostics, and prophylaxis in small animals.

K.	Course Attributes:		Not applicable
L.	Course Requirements:		
	i.	Prerequisites:	(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C
	ii.	Co-requisites:	VTCH A231L
	iii.	Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:		Yes

III. Course Level Justification

This intermediate course builds on the prerequisite anatomy, nursing skills, and small animal medicine information taught in VTCH A112, VTCH A113, VTCH A121, and VTCH A122.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Discuss radiation safety and radiographic procedures
- Present radiographic equipment preparation, quality control, processing, and record keeping
- Introduce ultrasonography, alternative imaging, and instrument maintenance

- Describe process of evaluating patient dental health status and performing routine dental prophylaxis
- Explain importance of client dental home-care education
- Describe dental home-care techniques

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Explain radiation safety and radiographic procedures	Class participation, role-playing, class discussion, written assignments, quizzes, exams, and completion of Skills List* tasks
Demonstrate knowledge of radiographic equipment preparation, quality control, processing, and record keeping	Class participation, role-playing, class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Demonstrate understanding of ultrasonography, alternative imaging, and instrument maintenance	Class participation, role-playing, class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Describe process of evaluating patient dental health status and performing routine dental prophylaxis	Class participation, role-playing, class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Discuss importance of client dental home-care education	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Describe dental home-care techniques	Role-playing, class discussion, written assignments, quizzes, exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class discussion and participation, and exams.

VI. Topical Course Outline

A. Radiology
   1. Basic concepts
   2. Equipment operation and maintenance
   3. Safety and quality-control measures
   4. Technique charts
   5. Positioning
   6. Film processing
   7. Record keeping
      a. Logs
      b. Reports

c. Files
d. Records

8. Contrast studies
9. Ultrasonography

B. Dentistry

1. Ethical and legal concerns
2. Oral examination and disease recognition
3. Equipment and personal protection
4. Anesthesia and pain management
5. Periodontal disease
6. Endontic disease
7. Gingivostomatitis
8. Feline tooth resorption
9. Dental prophylaxis and extractions
10. Dental records
11. Dental radiology
12. Dental home care

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

.

Brown, M. & Brown, L. (2014). *Lavin's radiography in veterinary technology* (5th ed.). St. Louis, MO: Elsevier.

Holmstrom, S. (2012). *Veterinary dentistry: A team approach* (2nd ed.). St. Louis, MO: Elsevier.

Thomas, L. & Lerche, P. (2009). *Anesthesia and analgesia for veterinary technicians* (4th ed.). St. Louis, MO: Elsevier.

VIII. Bibliography

Ayers, S. (2012). *Small animal radiographic techniques and positioning.* Hoboken, NJ: Wiley-Blackwell.

Bryant, S. (2010). *Anesthesia for veterinary technicians.* Hoboken, NJ: Wiley-Blackwell.

Colville, T. & Bassert, J. (2008). *Clinical anatomy and physiology for veterinary technicians.* St. Louis, MO: Elsevier.

Gorrel, C. & Derbyshire, S. (2005). *Veterinary dentistry for the nurse and technician.* St. Louis, MO: Elsevier.

Han, C. & Hurd, C. (2005). *Practical diagnostic imaging for the veterinary technician* (3rd ed.). St. Louis, MO: Elsevier.

Holmstrom, S., Frost Fitch, P, & Eisner, E. (2004). *Veterinary dental techniques for the small animal practitioner* (3rd ed.). St. Louis, MO: Elsevier.*

Perrone, J. (2012). *Small animal dental procedures for veterinary technicians and nurses.* Hoboken, NJ: Wiley-Blackwell.

Plumb, D. (2011). *Plumb's veterinary drug handbook* (7th ed.). Hoboken, NJ: Wiley-Blackwell.

Kesel, M. (2000). *Veterinary dentistry for the small animal technician.* Ames, IA: Iowa State University Press.*

*Classic text

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A231L	None	1.0	(0+3)

6. Complete Course Title
Veterinary Diagnostic Imaging and Dentistry Laboratory
Vet Diag Imaging & Dentist Lab
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/01/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Applies theories and principles of diagnostic imaging and dentistry techniques used in veterinary medicine. Uses safe procedures for producing quality radiographs. Employs learned dentistry techniques for performing dental evaluations, diagnostics, and prophylaxes in small animals.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A231

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date Karen L. Carpenter, DVM Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A231L
D.	Credits/Contact Hours:	1.0 (0+3) Contact Hours
E.	Course Title:	Veterinary Diagnostic Imaging and Dentistry Laboratory
F.	Grading:	A-F (Must pass with a minimum grade of C to receive credit for VTCH A231)
G.	Implementation Date:	Fall 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Applies theories and principles of diagnostic imaging and dentistry techniques used in veterinary medicine. Uses safe procedures for producing quality radiographs. Employs learned dentistry techniques for performing dental evaluations, diagnostics, and prophylaxes in small animals.

K.	Course Attributes:		Not applicable
L.	Course Requirements:		
	i.	Prerequisites:	(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C
	ii.	Co-requisites:	VTCH A231
	iii.	Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:		Yes

III. Course Level Justification

This course is the laboratory component of VTCH A231 and builds on the information taught in VTCH A112, VTCH A113, VTCH A121, and VTCH A122 and the corresponding laboratories.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Demonstrate radiation safety and radiographic procedures
- Demonstrate radiographic equipment preparation, quality control, processing, and recordkeeping
- Present ultrasonography, alternative imaging, and instrument maintenance

- Demonstrate evaluating patient dental health status and performing routine dental prophylaxis
- Model educating clients on dental home care

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Produce quality diagnostic radiographs while demonstrating radiation safety	Class participation, laboratory assignments, practical exams, and completion of Skills List* tasks
Prepare radiographic equipment and apply principles of quality control, processing, and recordkeeping	Class participation, role playing, laboratory assignments, quizzes, exams, and completion of Skills List tasks
Perform ultrasonography, alternative imaging, and instrument maintenance	Class participation, laboratory assignments, quizzes, exams, and completion of Skills List tasks
Evaluate patient's dental health status and perform routine dental prophylaxis (manual and machine)	Class participation, role playing, assignments, quizzes, exams, and completion of Skills List tasks
Role play communication of dental home-care techniques	Class participation, role playing, quizzes, exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written, oral, and laboratory assignments, class discussion and participation, role playing, quizzes, and exams.

VI. Topical Course Outline

A. Radiology
1. Basic concepts
2. Equipment operation and maintenance
3. Safety and quality control measures
4. Technique charts
5. Positioning
6. Film processing
7. Recordkeeping
   a. Logs
   b. Reports
   c. Files
   d. Records
8. Contrast studies
9. Ultrasonography

B. Dentistry

1. Ethical and legal concerns
2. Oral examination and disease recognition
3. Equipment and personal protection
4. Anesthesia and pain management
5. Periodontal disease
6. Endontic disease
7. Gingivostomatitis
8. Feline tooth resorption
9. Dental prophylaxis and extractions
10. Dental records
11. Dental radiology
12. Dental home care

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

.

Brown, M., & Brown, L. (2014). *Lavin's radiography in veterinary technology* (5th ed.). St. Louis, MO: Elsevier.

Holmstrom, S. (2012). *Veterinary dentistry: A team approach* (2nd ed.). St. Louis, MO: Elsevier.

Thomas, L., & Lerche, P. (2009). *Anesthesia and analgesia for veterinary technicians* (4th ed.). St. Louis, MO: Elsevier.

VIII. Bibliography

Ayers, S. (2012). *Small animal radiographic techniques and positioning.* Hoboken, NJ: Wiley-Blackwell.

Bryant, S. (2010). *Anesthesia for veterinary technicians.* Hoboken, NJ: Wiley-Blackwell.

Colville, T., & Bassert, J. (2008). *Clinical anatomy and physiology for veterinary technicians.* St. Louis, MO: Elsevier.

Gorrel, C., & Derbyshire, S. (2005). *Veterinary dentistry for the nurse and technician.* St. Louis, MO: Elsevier.

Han, C., & Hurd, C. (2005). *Practical diagnostic imaging for the veterinary technician* (3rd ed.). St. Louis, MO: Elsevier.

Holmstrom, S., Frost Fitch, P., & Eisner, E. (2004). *Veterinary dental techniques for the small animal practitioner* (3rd ed.). St. Louis, MO: Elsevier.*

Kesel, M. (2000). *Veterinary dentistry for the small animal technician.* Ames, IA: Iowa State University Press.*

Perrone, J. (2012). *Small animal dental procedures for veterinary technicians and nurses.* Hoboken, NJ: Wiley-Blackwell.

Plumb, D. (2011). *Plumb's veterinary drug handbook* (7th ed.). Hoboken, NJ: Wiley-Blackwell.

*Classic text

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A232	None	3.0	(3+0)

6. Complete Course Title
Veterinary Anesthesia and Analgesia
Vet Anesthesia and Analgesia
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/01/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Provides in-depth knowledge of anesthesia techniques, including identification and use of anesthetic-related drugs and equipment. Discusses performing pre-anesthesia evaluations, administering and monitoring anesthesia, providing post-anesthesia care, recognizing and responding to anesthetic emergencies, evaluating patients, and implementing pain management protocols.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A232L

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date Karen L. Carpenter, DVM Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A232
D.	Credits/Contact Hours:	3.0 (3+0) Contact Hours
E.	Course Title:	Veterinary Anesthesia and Analgesia
F.	Grading:	A-F (Must pass VTCH A232L with a minimum grade of C to pass VTCH A232)
G.	Implementation Date:	Fall 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Provides in-depth knowledge of anesthesia techniques, including identification and use of anesthetic-related drugs and equipment. Discusses performing pre-anesthesia evaluations, administering and monitoring anesthesia, providing post-anesthesia care, recognizing and responding to anesthetic emergencies, evaluating patients, and implementing pain management protocols.

K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C
	ii. Co-requisites:	VTCH A232L
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification

This intermediate course builds on the prerequisite pharmaceutical and nursing skills taught in VTCH A113, VTCH A120, and VTCH A122.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Discuss anesthesia-related drugs, calculations, dosages, and routes of administration
- Describe placing endotracheal tubes and administering anesthesia
- Explain delivery of anesthesia and operation and maintenance of associated instruments and equipment
- Discuss patient monitoring during anesthetic procedures

- Explain resuscitation procedures
- Describe the management of controlled-substances logs
- Explain techniques for evaluating patients and determining pain-management protocols
- Discuss evaluating responses to post-operative analgesia
- Explain the importance of client education for post-operative home care

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Explain anesthesia-related drugs, dosages, and administration routes (injection, endotracheal tube, mask)	Class participation, written assignments, quizzes, exams, and completion of Skills List* tasks
Calculate dosages of anesthesia-related drugs	Class participation and discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Demonstrate knowledge of endotracheal tubes and placement in patients	Class participation, role-playing, assignments, quizzes, exams, and completion of Skills List tasks
Describe delivery of anesthesia and operation and maintenance of associated instruments and equipment	Class participation, written assignments, quizzes, exams, and completion of Skills List tasks
Explain patient monitoring during anesthetic procedures	Class participation and discussion, role-playing, written assignments, quizzes, exams, and completion of Skills List tasks
Describe resuscitation procedures as needed for different scenarios	Class participation and discussion, role-playing, written assignments, quizzes, exams, and completion of Skills List tasks
Discuss managing controlled-substances logs	Class participation and discussion, role-playing, assignments, quizzes, exams, and completion of Skills List tasks
Discuss techniques for evaluating patients and determining pain-management protocols	Class participation and discussion, role-playing, assignments, quizzes, exams, and completion of Skills List tasks
Describe evaluating analgesic levels for post-operative patients	Class participation, role-playing, written assignments, quizzes, exams, and completion of Skills List tasks
Explain the importance of client education for post-operative home care	Class participation and discussion, role-playing, written assignments, quizzes, exams, and completion of Skills List tasks

* “Skills List” refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class participation and discussion, role-playing, and exams.

VI. Topical Course Outline

A. Anesthesia
   1. Patient preparation
   2. Anesthetic agents and adjuncts
   3. Fluid therapy
   4. Anesthetic equipment
   5. Anesthetic monitoring
   6. Principles of endotracheal intubation
   7. Anesthetic induction
   8. Manual and mechanical ventilation
   9. Recovery of anesthetic patient
   10. Anesthetic problems and emergencies
   11. Emergency medical supplies/crash cart
   12. Hazards of waste anesthetic gas

B. Analgesia
   1. Patient assessment
   2. Pain management protocols
   3. Post-operative pain management

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Bauer, M. (2010). *The veterinary technician's pocket partner.* Clifton Park, NY: Cengage Learning.

Crow, S. E., Walshaw, S. O., & Boyle, J. E. (2009). *Manual of clinical procedures in dogs, cats, rabbits, & rodents* (3rd ed.). Ames, IA: Wiley-Blackwell.

Grant, D. (2006). *Pain management in small animals*. St. Louis, MO: Elsevier.

Tear, M. (2012). *Small animal surgical nursing skills and concepts* (2nd ed.). St. Louis, MO: Elsevier.

Thomas, L. & Lerche, P. (2009). *Anesthesia and analgesia for veterinary technicians* (4th ed.). St. Louis, MO: Elsevier.

VIII. Bibliography

Animal Care Technologies. (2014). *Animal care training* DVD. Available from http://www.4act.com/training

Bill, R. L. (2006). *Clinical pharmacology and therapeutics for the veterinary technician* (3rd ed.). St. Louis, MO: Mosby Elsevier.

Bryant, S. (2010). *Anesthesia for veterinary technicians.* Ames, IA: Wiley-Blackwell.

Jack, C. M., & Watson, P. M. (2008). *Veterinary technician's daily reference guide: Canine and feline* (2nd ed.). Ames, IA: Blackwell Publishing.

Marshall, G. E. (2011). *Companion-animal dental and surgical instruments.* Lakewood, CO: AAHA Press.

Pattengale, P. (2009). *Tasks for the veterinary assistant* (2nd ed.). Ames, IA: Wiley-Blackwell.

Plumb, D. (2011). *Plumb's veterinary drug handbook* (7th ed.). Ames, IA: Wiley-Blackwell.

Romich, J. (2010). *Fundamentals of pharmacology for veterinary technicians* (2nd ed.). Clifton Park, NY: Delmar Cengage Learning.

Rockett, J. (2013). *The veterinary technician's guide to writing SOAPS.* Caldwell, ID: Rockett House Publishing.

Sonsthagen, T. F. (2014). *Veterinary instruments and equipment: A pocket guide* (3rd ed.). St. Louis, MO: Elsevier Mosby.

Wanamaker, B. P., & Massey, K. (2009). *Applied pharmacology for veterinary technicians* (4th ed.). St. Louis, MO: Saunders Elsevier.

Wuestenberg, K. (2012). *Clinical small animal care.* Ames, IA: Wiley-Blackwell.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A232L	None	1.0	(0+3)

6. Complete Course Title
Veterinary Anesthesia and Analgesia Laboratory
Vet Anesthesia & Analgesia Lab
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/01/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Applies anesthesia techniques, including identification and use of anesthetic-related drugs and equipment, for performing pre-anesthesia evaluations, administering and monitoring anesthesia, providing post-anesthesia care, recognizing and responding to anesthetic emergencies, evaluating patients, and implementing pain management protocols.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A232

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date Karen L. Carpenter, DVM Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A232L
D.	Credits/Contact Hours:	1.0 (0+3) Contact Hours
E.	Course Title:	Veterinary Anesthesia and Analgesia Laboratory
F.	Grading:	A-F (Must pass with a minimum grade of C to receive credit for VTCH A232)
G.	Implementation Date:	Fall 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Applies anesthesia techniques, including identification and use of anesthetic-related drugs and equipment, for performing pre-anesthesia evaluations, administering and monitoring anesthesia, providing post-anesthesia care, recognizing and responding to anesthetic emergencies, evaluating patients, and implementing pain management protocols.

K.	Course Attributes:		Not applicable
L.	Course Requirements:		
	i.	Prerequisites:	(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C
	ii.	Co-requisites:	VTCH A232
	iii.	Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:		Yes

III. Course Level Justification

This is the laboratory component of VTCH A232 and builds on the prerequisite pharmaceutical and nursing skills taught in VTCH A113, VTCH A120, and VTCH A122 and the associated laboratory courses.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Demonstrate using anesthesia-related drugs with dosages and routes of administration and performing calculations
- Demonstrate placing endotracheal tubes and administering anesthesia

- Show delivery of anesthesia and operation and maintenance of associated instruments and equipment
- Exhibit patient monitoring during anesthetic procedures
- Demonstrate resuscitation procedures
- Show recording in and managing controlled substances logs
- Demonstrate evaluating patients and determining pain management protocols
- Show evaluating responses to post-operative analgesia
- Demonstrate providing client education for post-operative home care

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Calculate dosages of anesthesia-related drugs and administer by correct route (injection, endotracheal tube, mask)	Class participation, written assignments, quizzes, exams, and completion of Skills List* tasks
Place endotracheal tubes and deliver anesthesia	Class participation, role playing, assignments, quizzes, exams, and completion of Skills List tasks
Operate and maintain anesthetic delivery and monitoring instruments and equipment	Class participation, written assignments, quizzes, exams, and completion of Skills List tasks
Use clinical signs and equipment to monitor patient status during anesthetic procedures	Class participation and discussion, role playing, written assignments, quizzes, exams, and completion of Skills List tasks
Perform resuscitation procedures as needed for different scenarios	Class participation and discussion, role playing, written assignments, quizzes, exams, and completion of Skills List tasks
Manage controlled substances logs	Class participation and discussion, role playing, assignments, quizzes, exams, and completion of Skills List tasks
Evaluate patients and implement pain management protocols as directed	Class participation and discussion, role playing, assignments, quizzes, exams, and completion of Skills List tasks
Evaluate analgesic levels for post-operative patients	Class participation, role playing, written assignments, quizzes, exams, and completion of Skills List tasks
Educate client education regarding post-operative home care	Class participation and discussion, role playing, written assignments, quizzes, exams, and completion of Skills List tasks

* “Skills List” refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class participation and discussion, role playing, and exams.

VI. Topical Course Outline

A. Anesthesia
   1. Patient preparation
   2. Anesthetic agents and adjuncts
   3. Fluid therapy
   4. Anesthetic equipment
   5. Anesthetic monitoring
   6. Principles of endotracheal intubation
   7. Anesthetic induction
   8. Manual and mechanical ventilation
   9. Recovery of anesthetic patient
   10. Anesthetic problems and emergencies
   11. Emergency medical supplies/crash cart
   12. Hazards of waste anesthetic gas

B. Analgesia
   1. Patient assessment
   2. Pain management protocols
   3. Post-operative pain management

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Bauer, M. (2010). *The veterinary technician's pocket partner.* Clifton Park, NY: Cengage Learning.

Crow, S. E., Walshaw, S. O., & Boyle, J. E. (2009). *Manual of clinical procedures in dogs, cats, rabbits, & rodents* (3rd ed.). Ames, IA: Wiley-Blackwell.

Grant, D. (2006). *Pain management in small animals*. St. Louis, MO: Elsevier.

Tear, M. (2012). *Small animal surgical nursing skills and concepts* (2nd ed.). St. Louis, MO: Elsevier.

Thomas, L., & Lerche, P. (2009). *Anesthesia and analgesia for veterinary technicians* (4th ed.). St. Louis, MO: Elsevier.

VIII. Bibliography

Animal Care Technologies. (2014). *Animal care training* DVD. Available from http://www.4act.com/training

Bill, R. L. (2006). *Clinical pharmacology and therapeutics for the veterinary technician* (3rd ed.). St. Louis, MO: Mosby Elsevier.

Bryant, S. (2010). *Anesthesia for veterinary technicians.* Ames, IA: Wiley-Blackwell.

Jack, C. M., & Watson, P. M. (2008). *Veterinary technician's daily reference guide: Canine and feline* (2nd ed.). Ames, IA: Blackwell Publishing.

Marshall, G. E. (2011). *Companion-animal dental and surgical instruments.* Lakewood, CO: AAHA Press.

Pattengale, P. (2009). *Tasks for the veterinary assistant* (2nd ed.). Ames, IA: Wiley-Blackwell.

Plumb, D. (2011). *Plumb's veterinary drug handbook* (7th ed.). Ames, IA: Wiley-Blackwell.

Romich, J. (2010). *Fundamentals of pharmacology for veterinary technicians* (2nd ed.). Clifton Park, NY: Delmar Cengage Learning.

Rockett, J. (2013). *The veterinary technician's guide to writing SOAPS.* Caldwell, ID: Rockett House Publishing.

Sonsthagen, T. F. (2014). *Veterinary instruments and equipment: A pocket guide* (3rd ed.). St. Louis, MO: Elsevier Mosby.

Wanamaker, B. P., & Massey, K. (2009). *Applied pharmacology for veterinary technicians* (4th ed.). St. Louis, MO: Saunders Elsevier.

Wuestenberg, K. (2012). *Clinical small animal care.* Ames, IA: Wiley-Blackwell.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A233	None	3.0	(3+0)

6. Complete Course Title
Veterinary Clinical Pathology
Veterinary Clinical Pathology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/01/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Covers hematology, cytology, blood chemistry, serology, and urinalysis. Describes in-depth procedures for performing diagnostic tests and collecting, handling, and evaluating specimens.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A233L

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A233
D.	Credits/Contact Hours:	3.0 (3+0) Contact Hours
E.	Course Title:	Veterinary Clinical Pathology
F.	Grading:	A-F (Must pass VTCH A233L with a minimum grade of C to pass VTCH A233)
G.	Implementation Date:	Fall 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable
J.	Course Description:	
	Covers hematology, cytology, blood chemistry, serology, and urinalysis. Describes in-depth procedures for performing diagnostic tests and collecting, handling, and evaluating specimens.	
K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C
	ii. Co-requisites:	VTCH A233L
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification

This course expands on information taught in VTCH A113.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:

The instructor will:

- Describe methods for collecting and handling blood samples
- Discuss complete blood counts and components of automated hematology analyzers
- Describe techniques for preparing and evaluating stained blood smears
- Describe types of clinical chemistry profiles and their indications
- Explain chemistry analyzers and indications for use
- Describe principles and methods of serologic testing
- Describe methods for collecting and handling cytology samples

- Explain procedures for evaluating cytology of solid tissue masses, organs, effusions, and synovial and cerebrospinal fluids
- Describe necropsy procedures and purposes
- Describe preparation of necropsy specimens for cytology and histopathology
- Outline procedures for preparing blood, cytology, and histopathology specimens for reference laboratory submission
- Describe collecting and preparing optic cytological specimens
- Identify collecting, handling, and processing procedures for urine specimens
- Explain physical, biochemical, and microscopic techniques for evaluating urine
- Describe urine sediment elements and their clinical importance
- Differentiate between normal and abnormal hematology, blood chemistry, serology, cytology, histopathology, and urinalysis findings

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Explain methods for collecting and handling blood samples	Class discussion, written assignments, quizzes, exams, and completion of Skills List* tasks
Explain complete blood counts and components of automated hematology analyzers	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Explain techniques for preparing and evaluating stained blood smears	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Identify types of clinical chemistry profiles and their indications	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Discuss chemistry analyzers and indications for use	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Explain principles and methods of serologic testing	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Discuss methods for collecting and handling cytology samples	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Describe procedures for evaluating cytology of solid tissue masses, organs, effusions, and synovial and cerebrospinal fluids	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Explain necropsy procedures and purposes	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Discuss preparation of necropsy specimens for cytology and histopathology	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Describe procedures for preparing blood, cytology, and histopathology specimens for reference laboratory submission	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Explain collecting and preparing optic cytological specimens	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Describe collecting, handling, and processing	Class discussion, written assignments, quizzes,

procedures for urine specimens	exams, and completion of Skills List tasks
Describe physical, biochemical, and microscopic techniques for evaluating urine	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Identify urine sediment elements and explain their clinical importance	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Contrast normal and abnormal hematology, blood chemistry, serology, cytology, histopathology, and urinalysis findings	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class participation and discussion, and exams.

VI. Topical Course Outline

A. Hematology
   1. Complete blood count
      a. Specimen collecting and handling
      b. Automated hematology analyzers
   2. Blood cells
      a. Packed cell volume, hematocrit
      b. Plasma protein
      c. White blood cell count
   3. Blood smear
      a. Preparing and evaluating
      b. Normal and abnormal morphology
      c. Differential white blood cell count
   4. Coagulation
      a. Bleeding time tests: ACT, APTT, PT
      b. Fibrinolysis tests
   5. Clinical chemistry
      a. Purpose
      b. Factors that affect results
      c. Chemistry analyzers
      d. Serologic testing

B. Cytology
   1. Specimen collection procedures: solid tissue masses, organs, effusions, and synovial and cerebrospinal fluids
   2. Specimen preparation for submission to reference laboratory
   3. Necropsy procedures and sampling
   4. Optic cytology specimen collection and preparation

C. Urinalysis

1. Specimen collecting and handling
2. Physical evaluation
3. Biochemical evaluation
4. Microscopic evaluation
5. Normal and abnormal urine sediment

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Voigt, G. L., & Swist, S. L. (2011). *Hematology techniques and concepts for veterinary technicians* (2nd ed.). Hoboken, NJ: Wiley-Blackwell.

VIII. Bibliography

Crow, S. E., Walshaw, S. O., & Boyle J. E. (2009). *Manual of clinical procedures in dogs, cats, rabbits, and rodents* (3rd ed.). Hoboken, NJ: Wiley-Blackwell.

Hendrix, C. M., & Sirois, M. (2007). *Laboratory procedures for veterinary technicians.* St. Louis, MO: Mosby.

Taylor, S. M. (2009). *Small animal clinical techniques.* Philadelphia, PA: Saunders.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A233L	None	1.0	(0+3)

6. Complete Course Title
Veterinary Clinical Pathology Laboratory
Vet Clinical Pathology Lab
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/02/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Applies information covering hematology, cytology, blood chemistry, serology, and urinalysis. Prepares students to perform diagnostic tests and collect, handle, and evaluate specimens.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A233

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A233L
D.	Credits/Contact Hours:	1.0 (0+3) Contact Hours
E.	Course Title:	Veterinary Clinical Pathology Laboratory
F.	Grading:	A-F (Must pass with minimum grade of C to receive credit for VTCH A233)
G.	Implementation Date:	Fall 2016
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Applies information covering hematology, cytology, blood chemistry, serology, and urinalysis. Prepares students to perform diagnostic tests and collect, handle, and evaluate specimens.

K.	Course Attributes:		Not applicable
L.	Course Requirements:		
	i.	Prerequisites:	VTCH A120, VTCH A121, VTCH A122, VTCH A122L, VTCH A223, VTCH A223L, and VTCH A195 with a minimum grade of C
	ii.	Co-requisites:	VTCH A233
	iii.	Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:		Yes

III. Course Level Justification

This course is the laboratory component of VTCH A233 and expands on information taught in VTCH A113L.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:

The instructor will:

- Demonstrate methods for collecting and handling blood samples
- Display complete blood counts and demonstrate operating automated hematology analyzers
- Show techniques for preparing and evaluating stained blood smears
- Demonstrate operating chemistry analyzers and performing serologic testing
- Perform methods for collecting and handling cytology samples
- Demonstrate evaluating cytology of solid tissue masses, organs, effusions, and synovial and cerebrospinal fluids

- Perform necropsy procedures
- Demonstrate preparing necropsy specimens for cytology and histopathology
- Show procedures for preparing blood, cytology, and histopathology specimens for reference laboratory submission
- Demonstrate collecting and preparing optic cytological specimens
- Model procedures for collecting, handling, and processing urine specimens
- Demonstrate physical, biochemical, and microscopic techniques for evaluating urine
- Display urine sediment elements
- Contrast normal and abnormal hematology, blood chemistry, serology, cytology, histopathology, and urinalysis findings

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Collect and handle blood samples	Class participation, laboratory assignments, quizzes, exams, and completion of Skills List* tasks
Identify complete blood counts and perform an automated hematology analysis	Class participation, laboratory assignments, quizzes, exams, and completion of Skills List tasks
Prepare and evaluate a stained blood smears	Class participation, laboratory assignments, quizzes, exams, and completion of Skills List tasks
Operate chemistry analyzers and perform serologic testing	Class participation, laboratory assignments, quizzes, exams, and completion of Skills List tasks
Collect, handle, and evaluate cytology specimens of solid tissue masses, organs, effusions, and synovial and cerebrospinal fluids	Class participation, laboratory assignments, quizzes, exams, and completion of Skills List tasks
Assist with necropsy procedures	Class participation, quizzes, exams, and completion of Skills List tasks
Prepare necropsy specimens for cytology and histopathology	Class participation, laboratory assignments, quizzes, exams, and completion of Skills List tasks
Prepare blood, cytology, and histopathology specimens for reference laboratory submission	Class participation, written and laboratory assignments, quizzes, exams, and completion of Skills List tasks
Collect and prepare optic cytological specimens	Class participation, laboratory assignments, quizzes, exams, and completion of Skills List tasks
Collect, handle, and process urine specimens	Class participation, laboratory assignments, quizzes, exams, and completion of Skills List tasks

Perform physical, biochemical, and microscopic techniques for evaluating urine	Class participation, laboratory assignments, quizzes, exams, and completion of Skills List tasks
Identify urine sediment elements	Laboratory and written assignments, quizzes, practical exams, and completion of Skills List tasks
Distinguish between normal and abnormal hematology, blood chemistry, serology, cytology, histopathology, and urinalysis findings	Class discussion, written and laboratory assignments, quizzes, exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance; quizzes; written, laboratory, and oral assignments; class participation and discussion; and written and practical exams.

VI. Topical Course Outline

A. Hematology
   1. Complete blood count
      a. Specimen collecting and handling
      b. Automated hematology analyzers
   2. Blood cells
      a. Packed cell volume, hematocrit
      b. Plasma protein
      c. White blood cell count
   3. Blood smear
      a. Preparing and evaluating
      b. Normal and abnormal morphology
      c. Differential white blood cell count
   4. Coagulation
      a. Bleeding time tests: ACT, APTT, PT
      b. Fibrinolysis tests
   5. Clinical chemistry
      a. Purpose
      b. Factors that affect results
      c. Chemistry analyzers
      d. Serologic testing

B. Cytology
   1. Specimen collection procedures: solid tissue masses, organs, effusions, and synovial and cerebrospinal fluids
   2. Specimen preparation for submission to reference laboratory
   3. Necropsy procedures and sampling

4. Optic cytology specimen collection and preparation

C. Urinalysis

1. Specimen collecting and handling
2. Physical evaluation
3. Biochemical evaluation
4. Microscopic evaluation
5. Normal and abnormal urine sediment

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Voigt, G. L., & Swist, S. L. (2011). *Hematology techniques and concepts for veterinary technicians* (2nd ed.). Hoboken, NJ: Wiley-Blackwell.

VIII. Bibliography

Crow, S. E., Walshaw, S. O., & Boyle J. E. (2009). *Manual of clinical procedures in dogs, cats, rabbits, and rodents* (3rd ed.). Hoboken, NJ: Wiley-Blackwell.

Hendrix, C. M., & Sirois, M. (2007). *Laboratory procedures for veterinary technicians.* St. Louis, MO: Mosby.

Taylor, S. M. (2009). *Small animal clinical techniques.* Philadelphia, PA: Saunders.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A240	None	1.0	(1+0)

6. Complete Course Title
Applied Small Animal Behavior II
Applied Sm Animal Behavior II
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/02/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Expands on principles of learning theory and behavior modification techniques. Describes inappropriate elimination, disruptive behavior, separation anxiety, fear, and aggression in dogs and cats and situational and behavioral modifications used for addressing those problems. Discusses pharmacotherapy as an adjunct for behavior modification.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
None

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date Karen L. Carpenter, DVM Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A240
D.	Credits/Contact Hours:	1.0 (1+0) Contact Hours
E.	Course Title:	Applied Small Animal Behavior II
F.	Grading:	A-F
G.	Implementation Date:	Spring 2017
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Expands on principles of learning theory and behavior modification techniques. Describes inappropriate elimination, disruptive behavior, separation anxiety, fear, and aggression in dogs and cats and situational and behavioral modifications used for addressing those problems. Discusses pharmacotherapy as an adjunct for behavior modification.

K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C
	ii. Co-requisites:	None
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification
This course expands and builds on the principles learned in VTCH A130.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Review principles and applications of learning theory for training and behavior modification in dogs and cats
- Discuss medical conditions associated with inappropriate elimination problems in dogs and cats
- Describe situational and behavioral concerns contributing to inappropriate elimination problems in dogs and cats and behavior modification techniques for addressing them

- Explain reasons for unruly and disruptive behaviors in dogs and cats and techniques for correcting them
- Discuss situational and behavioral underpinnings for separation, fear, and anxiety problems in dogs and cats and behavior modification techniques for dealing with them
- Describe problem aggression in dogs and cats, potential situational and behavioral causes, and techniques for handling them
- Provide opportunity for supervised behavior modification work with dogs and cats
- Describe development of client handouts for resolving common problem behaviors of dogs and cats
- Provide guidance and feedback on student-produced client-education handouts for resolving common problem behaviors of dogs and cats

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Explain principles and applications of learning theory for training and behavior modification in dogs and cats	Pre-test, written assignments, quizzes, midterm and final exams
Describe medical conditions associated with inappropriate elimination problems in dogs and cats	Class discussion, field trips, written assignments, quizzes, and exams
Discuss situational and behavioral concerns contributing to inappropriate elimination problems in dogs and cats and behavior modification techniques for addressing them	Class discussion, field trips, written assignments, quizzes, and exams
Discuss reasons for unruly and disruptive behaviors in dogs and cats and techniques for correcting them	Class participation, field trips, written assignments, quizzes, and exams
Explain situational and behavioral underpinnings for separation, fear, and anxiety problems in dogs and cats and behavior modification techniques for dealing with them	Field trips, role playing, written assignments, class participation, quizzes, and exams
Describe problem aggression in dogs and cats, potential situational and behavioral causes, and techniques for handling them	Class participation, field trips, written assignments, quizzes, and exams
Apply behavior modification techniques to problem behaviors commonly encountered in dogs and cats	Field trips, role playing, and class participation
Develop client-education handouts for resolving common problem behaviors of dogs and cats	Client-education handout

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this program and possibly this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class discussion and participation, field trips, and exams.

VI. Topical Course Outline

A. Review Principles of Learning Theory
   1. Classical conditioning
   2. Operant conditioning
   3. Instrumental learning
   4. Reinforcement vs. punishment
   5. Positive vs. aversive behavior control

B. Review Training Preparations
   1. Identify objectives and goals
   2. Select training technique
   3. Develop training schedule
   4. Evaluate progress

C. Review Practical Applications
   1. Selecting primary and secondary reinforcements
   2. Timing and scheduling reinforcement
   3. Shaping (successive approximation)
   4. Using behavior chains and the Premack principle

D. Inappropriate Elimination
   1. Medical conditions associated with inappropriate elimination problems
   2. Inappropriate elimination problems in dogs
   3. Inappropriate elimination problems in cats
   4. Situational and behavioral modifications addressing inappropriate elimination
   5. Pharmacotherapy for inappropriate elimination problems

E. Unruly and Disruptive Behavior
   1. Disruptive dog behaviors
   2. Disruptive cat behaviors
   3. Situational and behavioral modifications for eliminating unruly behaviors

F. Separation, Fear, and Anxiety Problems
   1. Separation anxiety in dogs
   2. Situational, behavioral, and pharmacotherapy treatments for addressing separation anxiety
   3. Fear-related behavior in dogs and cats
   4. Situational and behavioral modifications for addressing fear

G. Problem Aggression in Dogs and Cats
   1. Problem aggression in dogs
   2. Situational and behavioral modifications for addressing dog aggression
   3. Problem aggression in cats
   4. Situational and behavioral modifications for addressing cat aggression

H. Clinical Application for Veterinary Technicians
   1. Written communication through handout development
   2. Oral communication through role playing and volunteer work

VII. Suggested Text(s)

Case, L. P. (2009). *Canine and feline behavior and training: A complete guide to understanding our two best friends*. Clifton Park, NY: Delmar, Cengage Learning.

VIII. Bibliography

Case, L. P. (2005). *The dog: Its behavior, nutrition and health* (2nd ed.). Ames, IA: Blackwell Publishing.

Case, L. P. (2003). *The cat: Its behavior, nutrition, and health.* Ames, IA: Blackwell Publishing.*

Overall, K. (1997). *Clinical behavioral medicine for small animals.* St. Louis, MO: Mosby.*

Pryor, K. (2002). *Don't shoot the dog* (Rev. ed.). New York, NY: Bantam Books.*

Yin, S. (2010). *How to behave so your dog behaves* (2nd ed.). Neptune, NJ: T.F.H. Publications.

Yin, S. (2009). *Low stress handling, restraint and behavior modification of dogs and cats: Techniques for developing patients who love their visits*. Davis, CA: Cattle Dog Publishing.

*Classic text

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A241	None	2.0	(2+0)

6. Complete Course Title
Laboratory and Exotic Animal Medicine
Laboratory & Exotic Animal Med
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/08/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Discusses common laboratory and exotic animal species and their unique husbandry issues, handling and restraining, gender determination, reproduction, nutrition, common diseases, and clinical and surgical procedures.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A241L

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A241
D.	Credits/Contact Hours:	2.0 (2+0) Contact Hours
E.	Course Title:	Laboratory and Exotic Animal Medicine
F.	Grading:	A-F (Must pass VTCH A241L with a minimum grade of C to pass VTCH A241)
G.	Implementation Date:	Spring 2017
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable
J.	Course Description:	

Discusses common laboratory and exotic animal species and their unique husbandry issues, handling and restraining, gender determination, reproduction, nutrition, common diseases, and clinical and surgical procedures.

K.	Course Attributes:		Not applicable
L.	Course Requirements:		
	i.	Prerequisites:	(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C
	ii.	Co-requisites:	VTCH A241L
	iii.	Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:		Yes

III. Course Level Justification

This course is based on knowledge and skills gained in all previous VTCH courses.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:

The instructor will:

- Describe the natural history and taxonomy of common laboratory and exotic animals (bird, reptile, rabbit, ferret, guinea pig, rodent, pocket pet, and other exotic species seen in veterinary practices)
- Explain the unique husbandry and nutritional concerns of common laboratory and exotic animals
- Describe gender determination and reproduction in common laboratory and exotic animals
- Discuss potential zoonotic disease concerns of common laboratory and exotic animals

- Describe common diseases seen in common laboratory and exotic animals
- Describe restraining and handling techniques for common laboratory and exotic animals during clinical, diagnostic, surgical, anesthetic, and therapeutic procedures
- Compare and contrast physical examination findings between common laboratory and exotic animals
- Discuss clinical and diagnostic procedures for common laboratory and exotic animals
- Describe surgical procedures and anesthesia used for common laboratory and exotic animals
- Compare and describe therapeutic procedures for common laboratory and exotic animals
- Explain how rabbits and rodents may be used for research

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Discuss the natural history and taxonomy of common laboratory and exotic animals (bird, reptile, rabbit, ferret, guinea pig, rodent, pocket pet, and other exotic species seen in veterinary practices)	Class discussion, written assignments, quizzes, exams, and completion of Skills List* tasks
Describe the unique husbandry and nutritional concerns of common laboratory and exotic animals	Class discussion, written assignments, quizzes, exams, projects, and completion of Skills List tasks
Explain gender determination and reproduction in common laboratory and exotic animals	Class discussion, written assignments, quizzes, exams, projects, and completion of Skills List tasks
Demonstrate understanding of potential zoonotic disease concerns of common laboratory and exotic animals	Written assignments, quizzes, exams, and completion of Skills List tasks
Discuss common diseases seen in common laboratory and exotic animals	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Explain restraining and handling techniques for common laboratory and exotic animals during clinical, diagnostic, surgical, anesthetic, and therapeutic procedures	Class participation, role playing, written assignments, quizzes, exams, and completion of Skills List tasks
Differentiate physical examination findings of common laboratory and exotic animals	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Describe clinical and diagnostic procedures for common laboratory and exotic animals	Class discussion, written assignments, role playing, quizzes, exams, and completion of Skills List tasks
Explain surgical procedures and anesthesia used for common laboratory and exotic animals	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Contrast and explain therapeutic procedures for	Class discussion, written assignments, quizzes,

common laboratory and exotic animals	exams, and completion of Skills List tasks
Discuss how rabbits and rodents may be used for research	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class participation and discussion, role playing, and exams.

VI. Topical Course Outline

A. Birds
   1. Natural history and taxonomy of common species seen in veterinary practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures

B. Reptiles
   1. Natural history and taxonomy of common species seen in veterinary practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures

C. Rabbits
   1. Natural history and taxonomy of common species seen in veterinary practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures
   9. Use as research animals

D. Ferrets
   1. Natural history and taxonomy of common species seen in veterinary practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures
E. Guinea Pigs
   1. Natural history and taxonomy of common species seen in veterinary practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures
F. Rodents
   1. Natural history and taxonomy of common species seen in veterinary practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures
   9. Use as research animals
G. Pocket Pets
   1. Natural history and taxonomy of common species seen in veterinary practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures
H. Other Exotic Animal Species (Including Chinchillas, Hedgehogs, Fish, and Amphibians)
   1. Natural history and taxonomy of common species seen in veterinary practice
   2. Husbandry and nutrition

3. Gender determination and reproduction
4. Zoonotic diseases
5. Restraint procedures and physical examination
6. Clinical and diagnostic procedures
7. Surgical and anesthetic procedures
8. Therapeutic procedures

VII. Suggested Text(s)

Ballard, B., & Cheek, R. (2010). *Exotic animal medicine for the veterinary technician* (2nd ed.). Hoboken, NJ: Wiley-Blackwell.

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

VIII. Bibliography

Crow, S. E., Walshaw, S. O., & Boyle J. E. (2009). *Manual of clinical procedures in dogs, cats, rabbits and rodents* (3rd ed.). Hoboken, NJ: Wiley-Blackwell.

Sheldon, C. C., Topel, J. A., & Sonsthagen, T. (2006). *Animal restraint for veterinary professionals.* St. Louis, MO: Mosby.

Sirois, M. (2004). *Laboratory animal medicine: Principles and procedures.* St. Louis, MO: Elsevier.*

Summers, A. (2013). *Common diseases of companion animals* (3rd ed.). St. Louis, MO: Elsevier.

Taylor, S. M. (2009). *Small animal clinical techniques.* Philadelphia, PA: Saunders.

Tisch, D. (2006). *Animal feeds, feeding and nutrition, and ration evaluation with CD-ROM*. Clifton Park, NY: Thompson Delmar Learning.

*Classic text

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A241L	None	1.0	(0+3)

6. Complete Course Title
Laboratory and Exotic Animal Medicine Laboratory
Lab & Exotic Animal Med Lab
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/10/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Applies techniques for handling, restraining, care, feeding, determining gender, and performing clinical and surgical procedures of common laboratory and exotic animals.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A241

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A241L
D.	Credits/Contact Hours:	1.0 (0+3) Contact Hours
E.	Course Title:	Laboratory and Exotic Animal Medicine Laboratory
F.	Grading:	A-F (Must pass with aminimum grade of C to receive credit for VTCH A241)
G.	Implementation Date:	Spring 2017
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Applies techniques for handling, restraining, care, feeding, determining gender, and performing clinical and surgical procedures of common laboratory and exotic animals.

K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C
	ii. Co-requisites:	VTCH A241
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification

This course is the laboratory component of VTCH A241 and is based on knowledge and skills gained in all previous VTCH courses.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Introduce common laboratory and exotic animals (bird, reptile, rabbit, ferret, guinea pig, rodent, pocket pet, and other exotic species seen in veterinary practice)
- Demonstrate care and feeding of common laboratory and exotic animals
- Demonstrate determining gender of common laboratory and exotic animals
- Reinforce safety procedures for preventing the transmission of potential zoonotic diseases from common laboratory and exotic animals

- Demonstrate nursing care for common laboratory and exotic animals
- Demonstrate restraining and handling techniques for common laboratory and exotic animals during clinical, diagnostic, surgical, anesthetic, and therapeutic procedures
- Demonstrate physical examination of common laboratory and exotic animals
- Demonstrate clinical and diagnostic procedures for common laboratory and exotic animals
- Demonstrate surgical procedures and anesthesia used for common laboratory and exotic animals
- Demonstrate therapeutic procedures for common laboratory and exotic animals

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Identify common laboratory and exotic animals (bird, reptile, rabbit, ferret, guinea pig, rodent, pocket pet, and other exotic species seen in veterinary practice)	Class participation, lab assignments, quizzes, exams, and completion of Skills List* tasks
Care for and feed common laboratory and exotic animals	Class participation, homework assignments, quizzes, exams, and completion of Skills List tasks
Determine gender of common laboratory and exotic animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Demonstrate safety procedures for preventing the transmission of potential zoonotic diseases from common laboratory and exotic animals	Class participation, quizzes, exams, and completion of Skills List tasks
Provide nursing care for common laboratory and exotic animals	Class participation, homework assignments, quizzes, exams, and completion of Skills List tasks
Restrain and handle common laboratory and exotic animals during clinical, diagnostic, surgical, anesthetic, and therapeutic procedures	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Assist with physical examination of common laboratory and exotic animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Perform clinical and diagnostic procedures for common laboratory and exotic animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Assist with surgical procedures and anesthesia in common laboratory and exotic animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Perform therapeutic procedures on common laboratory and exotic animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks

* “Skills List” refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written, laboratory, and oral assignments, class participation and discussion, and exams.

VI. Topical Course Outline

A. Birds
   1. Natural history and taxonomy of common species seen in practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures

B. Reptiles
   1. Natural history and taxonomy of common species seen in practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures

C. Rabbits
   1. Natural history and taxonomy of common species seen in practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures
   9. Use as research animals

D. Ferrets
   1. Natural history and taxonomy of common species seen in practice
   2. Husbandry and nutrition
   3. Gender determination and reproduction
   4. Zoonotic diseases
   5. Restraint procedures and physical examination
   6. Clinical and diagnostic procedures
   7. Surgical and anesthetic procedures
   8. Therapeutic procedures

E. Guinea Pigs
   1. Natural history and taxonomy of common species seen in practice

2. Husbandry and nutrition
3. Gender determination and reproduction
4. Zoonotic diseases
5. Restraint procedures and physical examination
6. Clinical and diagnostic procedures
7. Surgical and anesthetic procedures
8. Therapeutic procedures

F. Rodents
1. Natural history and taxonomy of common species seen in practice
2. Husbandry and nutrition
3. Gender determination and reproduction
4. Zoonotic diseases
5. Restraint procedures and physical examination
6. Clinical and diagnostic procedures
7. Surgical and anesthetic procedures
8. Therapeutic procedures
9. Use as research animals

G. Pocket Pets
1. Natural history and taxonomy of common species seen in practice
2. Husbandry and nutrition
3. Gender determination and reproduction
4. Zoonotic diseases
5. Restraint procedures and physical examination
6. Clinical and diagnostic procedures
7. Surgical and anesthetic procedures
8. Therapeutic procedures

H. Other Exotic Animal Species (Including Chinchillas, Hedgehogs, and Amphibians)
1. Natural history and taxonomy of common species seen in practice
2. Husbandry and nutrition
3. Gender determination and reproduction
4. Zoonotic diseases
5. Restraint procedures and physical examination
6. Clinical and diagnostic procedures
7. Surgical and anesthetic procedures
8. Therapeutic procedures

VII. Suggested Text(s)

Ballard, B., & Cheek, R. (2010). *Exotic animal medicine for the veterinary technician* (2nd ed.). Hoboken, NJ: Wiley-Blackwell.

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

VIII. Bibliography

Crow, S. E., Walshaw, S. O., & Boyle J. E. (2009). *Manual of clinical procedures in dogs, cats, rabbits and rodents* (3rd ed.). Hoboken, NJ: Wiley-Blackwell.

Sheldon, C. C., Topel, J. A., & Sonsthagen, T. (2006). *Animal restraint for veterinary professionals.* St. Louis, MO: Mosby.

Sirois, M. (2004). *Laboratory animal medicine: Principles and procedures.* St. Louis, MO: Elsevier.*

Summers, A. (2013). *Common diseases of companion animals* (3rd ed.). St. Louis, MO: Elsevier.

Taylor, S. M. (2009). *Small animal clinical techniques.* Philadelphia, PA: Saunders.

Tisch, D. (2006). *Animal feeds, feeding and nutrition, and ration evaluation with CD-ROM*. Clifton Park, NY: Thompson Delmar Learning.

*Classic text

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A242	None	2.0	(2+0)

6. Complete Course Title
Large Animal Medicine and Clinical Procedures
Lrg Animal Med & Clinical Proc
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/08/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Discusses common large animal species and their unique husbandry issues, handling and restraining, reproduction, nutrition, common diseases, and clinical and surgical procedures.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A242L

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A242
D.	Credits/Contact Hours:	2.0 (2+0) Contact Hours
E.	Course Title:	Large Animal Medicine and Clinical Procedures
F.	Grading:	A-F (Must pass VTCH A242L with a minimum grade of C to pass VTCH A242)
G.	Implementation Date:	Spring 2017
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable
J.	Course Description:	
K.	Discusses common large animal species and their unique husbandry issues, handling and restraining, reproduction, nutrition, common diseases, and clinical and surgical procedures.	
L.	Course Attributes:	Not applicable
M.	Course Requirements:	
	i. Prerequisites:	(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C
	ii. Co-requisites:	VTCH A242L
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
N.	Course Fee:	Yes

III. Course Level Justification

This course is based on knowledge and skills gained in all previous VTCH courses.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:

The instructor will:

- Describe common large animal species (horse, cattle, sheep, goat, swine, and camelid breeds seen in veterinary practices)
- Explain the unique husbandry and nutritional concerns of common large animals
- Describe reproduction and breeding management practices in common large animals
- Discuss potential zoonotic disease concerns and herd health issues of common large animals

- Describe common diseases of common large animals
- Describe restraining and handling techniques for common large animals during clinical, diagnostic, surgical, anesthetic, and therapeutic procedures
- Explain physical examination techniques and findings of common large animals
- Discuss clinical and diagnostic procedures for common large animals
- Describe common surgical procedures and anesthesia used for large animals
- Discuss therapeutic procedures and their administration to common large animals
- Explain preventive medicine protocols for large animals including vaccine types and vaccination schedules
- Discuss drug withdrawal periods in food animals

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Discuss common large animals (horse, cattle, sheep, goat, swine, and camelid breeds seen in veterinary practice)	Class discussion, written assignments, quizzes, exams, and completion of Skills List* tasks
Describe the unique husbandry and nutritional concerns of common large animals	Class discussion, written assignments, quizzes, exams, projects, and completion of Skills List tasks
Explain reproduction and breeding management practices in common large animals	Class discussion, written assignments, quizzes, exams, projects, and completion of Skills List tasks
Demonstrate understanding of potential zoonotic disease concerns and herd health issues of common large animals	Written assignments, quizzes, exams, and completion of Skills List tasks
Discuss common diseases of common large animals	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Explain restraining and handling techniques for common large animals during clinical, diagnostic, surgical, anesthetic, and therapeutic procedures	Class participation, role playing, written assignments, quizzes, exams, and completion of Skills List tasks
Discuss physical examination techniques and findings of common large animal species	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Describe clinical and diagnostic procedures for common large animals	Class discussion, written assignments, role playing, quizzes, exams, and completion of Skills List tasks
Explain common surgical procedures and anesthesia used for large animals	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Discuss therapeutic procedures and their administration to common large animals	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Describe preventive medicine protocols for large animals including vaccine types and	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks

vaccination schedules	
Demonstrate knowledge of drug withdrawal periods in food animals	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class participation and discussion, role playing, and exams.

VI. Topical Course Outline

A. Horses
   1. Common breeds seen in veterinary practice
   2. Husbandry and nutrition
   3. Reproduction and breeding management
   4. Zoonotic diseases
   5. Preventive medicine and herd health
   6. Restraint procedures and physical examination
   7. Clinical and diagnostic procedures
   8. Surgical and anesthetic procedures
   9. Therapeutic procedures

B. Cattle
   1. Common breeds seen in veterinary practice
   2. Husbandry and nutrition
   3. Reproduction and breeding management
   4. Zoonotic diseases
   5. Preventive medicine and herd health
   6. Restraint procedures and physical examination
   7. Clinical and diagnostic procedures
   8. Surgical and anesthetic procedures
   9. Therapeutic procedures
   10. Drug withdrawal periods

C. Sheep
   1. Common breeds seen in veterinary practice
   2. Husbandry and nutrition
   3. Reproduction and breeding management
   4. Zoonotic diseases
   5. Preventive medicine and herd health
   6. Restraint procedures and physical examination
   7. Clinical and diagnostic procedures
   8. Surgical and anesthetic procedures
   9. Therapeutic procedures
   10. Drug withdrawal periods

D. Goats
   1. Common breeds seen in veterinary practice
   2. Husbandry and nutrition
   3. Reproduction and breeding management
   4. Zoonotic diseases
   5. Preventive medicine and herd health
   6. Restraint procedures and physical examination
   7. Clinical and diagnostic procedures
   8. Surgical and anesthetic procedures
   9. Therapeutic procedures
   10. Drug withdrawal periods

E. Swine
   1. Common breeds seen in veterinary practice
   2. Husbandry and nutrition
   3. Reproduction and breeding management
   4. Zoonotic diseases
   5. Preventive medicine and herd health
   6. Restraint procedures and physical examination
   7. Clinical and diagnostic procedures
   8. Surgical and anesthetic procedures
   9. Therapeutic procedures
   10. Drug withdrawal periods

F. Camelids
   1. Common breeds seen in veterinary practice
   2. Husbandry and nutrition
   3. Reproduction and breeding management
   4. Zoonotic diseases
   5. Preventive medicine and herd health
   6. Restraint procedures and physical examination
   7. Clinical and diagnostic procedures
   8. Surgical and anesthetic procedures
   9. Therapeutic procedures

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Holtgrew-Bohling, K. (2011). *Large animal clinical procedures for veterinary technicians* (2nd ed.). St. Louis, MO: Mosby.

VIII. Bibliography

D'Andrea, A., & Sjogren, J. (2013). *Veterinary technician's large animal daily reference guide*. Hoboken, NJ: Wiley-Blackwell.

Ekesbo, I. (2011). *Farm animal behavior: Characteristics for assessment of health and welfare*. Cambridge, UK: Cambridge University Press.

Reeder, D., Miller, S., Wilfong, D., Leitch, M., & Zimmel, D. (2009). *AAEVT's equine manual for veterinary technicians*. Hoboken, NJ: Wiley-Blackwell.

Tisch, D. (2006). *Animal feeds, feeding and nutrition, and ration evaluation with CD-ROM*. Clifton Park, NY: Thompson Delmar Learning.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A242L	None	1.0	(0+3)

6. Complete Course Title
Large Animal Medicine and Clinical Procedures Laboratory
Lrg Animal Med & Clin Proc Lab
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/11/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Applies techniques for care, reproductive management, disease prevention, handling, restraining, feeding, and performing clinical and surgical procedures for common large animals.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
VTCH A242

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A242L
D.	Credits/Contact Hours:	1.0 (0+3) Contact Hours
E.	Course Title:	Large Animal Medicine and Clinical Procedures Laboratory
F.	Grading:	A-F (Must pass with aminimum grade of C to receive credit for VTCH A242)
G.	Implementation Date:	Spring 2017
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable
J.	Course Description:	
	Applies techniques for care, reproductive management, disease prevention, handling, restraining, feeding, and performing clinical and surgical procedures for common large animals.	
K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C
	ii. Co-requisites:	VTCH A242
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification

This course is the laboratory component of VTCH A242 and builds on knowledge and skills gained in all previous VTCH courses.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:

The instructor will:

- Present breeds of common large animals (horses, cattle, sheep, goats, swine, and camelids seen in veterinary practice)
- Demonstrate care and feeding of common large animals
- Demonstrate reproduction and breeding management practices in common large animals
- Reinforce safety procedures for preventing the transmission of potential zoonotic diseases from common large animals

- Demonstrate nursing care for common large animals
- Demonstrate restraining and handling techniques for common large animals during clinical, diagnostic, surgical, anesthetic, and therapeutic procedures
- Demonstrate physical examination of common large animals
- Demonstrate clinical and diagnostic procedures for common large animals
- Demonstrate surgical procedures and anesthesia used for common large animals
- Demonstrate therapeutic procedures for common large animals
- Demonstrate vaccination and deworming procedures for common large animals

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Identify breeds of common large animals (horses, cattle, sheep, goats, swine, and camelids seen in veterinary practice)	Class participation, lab assignments, quizzes, exams, and completion of Skills List* tasks
Care for and feed common large animals	Class participation, homework assignments, quizzes, exams, and completion of Skills List tasks
Assist with reproduction and breeding management practices in common large animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Demonstrate safety procedures for preventing the transmission of potential zoonotic diseases from common large animals	Class participation, quizzes, exams, and completion of Skills List tasks
Provide nursing care for common large animals	Class participation, homework assignments, quizzes, exams, and completion of Skills List tasks
Restrain and handle common large animals during clinical, diagnostic, surgical, anesthetic, and therapeutic procedures	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Assist with physical examination of common large animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Perform clinical and diagnostic procedures for common large animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Assist with surgical procedures and anesthesia in common large animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Administer therapeutics to common large animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks
Assist with vaccination and deworming procedures for common large animals	Class participation, lab assignments, quizzes, exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance; quizzes; written, laboratory, and oral assignments; class participation and discussion; role playing; and exams.

VI. Topical Course Outline

A. Horses
   1. Common breeds seen in practice
   2. Husbandry and nutrition
   3. Reproduction and breeding management
   4. Zoonotic diseases
   5. Preventive medicine and herd health
   6. Restraint procedures and physical examination
   7. Clinical and diagnostic procedures
   8. Surgical and anesthetic procedures
   9. Therapeutic procedures

B. Cattle
   1. Common breeds seen in practice
   2. Husbandry and nutrition
   3. Reproduction and breeding management
   4. Zoonotic diseases
   5. Preventive medicine and herd health
   6. Restraint procedures and physical examination
   7. Clinical and diagnostic procedures
   8. Surgical and anesthetic procedures
   9. Therapeutic procedures
   10. Drug withdrawal periods

C. Sheep
   1. Common breeds seen in practice
   2. Husbandry and nutrition
   3. Reproduction and breeding management
   4. Zoonotic diseases
   5. Preventive medicine and herd health
   6. Restraint procedures and physical examination
   7. Clinical and diagnostic procedures
   8. Surgical and anesthetic procedures
   9. Therapeutic procedures
   10. Drug withdrawal periods

D. Goats
   1. Common breeds seen in practice
   2. Husbandry and nutrition
   3. Reproduction and breeding management
   4. Zoonotic diseases
   5. Preventive medicine and herd health
   6. Restraint procedures and physical examination

7. Clinical and diagnostic procedures
8. Surgical and anesthetic procedures
9. Therapeutic procedures
10. Drug withdrawal periods

E. Swine
1. Common breeds seen in practice
2. Husbandry and nutrition
3. Reproduction and breeding management
4. Zoonotic diseases
5. Preventive medicine and herd health
6. Restraint procedures and physical examination
7. Clinical and diagnostic procedures
8. Surgical and anesthetic procedures
9. Therapeutic procedures
10. Drug withdrawal periods

F. Camelids
1. Common breeds seen in practice
2. Husbandry and nutrition
3. Reproduction and breeding management
4. Zoonotic diseases
5. Preventive medicine and herd health
6. Restraint procedures and physical examination
7. Clinical and diagnostic procedures
8. Surgical and anesthetic procedures
9. Therapeutic procedures

VII. Suggested Text(s)

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Holtgrew-Bohling, K. (2011). *Large animal clinical procedures for veterinary technicians* (2nd ed.). St. Louis, MO: Mosby.

VIII. Bibliography

D'Andrea, A., & Sjogren, J. (2013). *Veterinary technician's large animal daily reference guide*. Hoboken, NJ: Wiley-Blackwell.

Ekesbo, I. (2011). *Farm animal behavior: Characteristics for assessment of health and welfare*. Cambridge, UK: Cambridge University Press.

Reeder, D., Miller, S., Wilfong, D., Leitch, M., & Zimmel, D. (2009). *AAEVT's equine manual for veterinary technicians*. Hoboken, NJ: Wiley-Blackwell.

Tisch, D. (2006). *Animal feeds, feeding and nutrition, and ration evaluation with CD-ROM*. Clifton Park, NY: Thompson Delmar Learning.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A243	None	1.0	(1+0)

6. Complete Course Title
Career Success for Veterinary Technicians
Career Success for Vet Techs
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/10/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Emphasizes professionalism, critical thinking tools, interpersonal skills, and professional ethics for success as a veterinary technician. Teaches résumé writing and job interviewing techniques. Explores career options, professional development opportunities, and current and projected trends in veterinary technology.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
None

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date Karen L. Carpenter, DVM Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A243
D.	Credits/Contact Hours:	1.0 (1+0) Contact Hours
E.	Course Title:	Career Success for Veterinary Technicians
F.	Grading:	A-F
G.	Implementation Date:	Spring 2017
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Emphasizes professionalism, critical thinking tools, interpersonal skills, and professional ethics for success as a veterinary technician. Teaches résumé writing and job interviewing techniques. Explores career options, professional development opportunities, and current and projected trends in veterinary technology.

K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C
	ii. Co-requisites:	None
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification

This course focuses on skills learned in previous VTCH courses and applies them to professional success.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Describe and demonstrate professional résumé and cover-letter writing skills
- Outline successful interview techniques
- Discuss personal and professional management skills required to work as a successful team member
- Associate critical thinking and interpersonal skills with high-quality patient care and job performance
- Identify career options and professional development opportunities

- Explain importance of lifelong learning and continuing medical education
- Review need for following and upholding applicable laws using the veterinary technology profession's ethical codes

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Write a professional résumé and cover letter	Class discussion, written assignments, quizzes, and exams
Give a successful interview in a role-playing exercise	Class participation and role playing
Demonstrate personal and professional management skills required to work as a successful team member	Class participation, role playing, quizzes, exams, and completion of Skills List* tasks
Demonstrate critical thinking and interpersonal skills leading to high-quality patient care and job performance	Class participation, role playing, oral assignments, quizzes, exams, and completion of Skills List tasks
Describe career options and professional development opportunities	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Discuss importance of lifelong learning and continuing medical education	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks
Explain importance of following and upholding applicable laws using the veterinary technology profession's ethical codes	Class discussion, written assignments, quizzes, exams, and completion of Skills List tasks

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class participation and discussion, role playing, and exams.

VI. Topical Course Outline

A. Professional Résumé and Cover-Letter Writing
B. Effective Employee Interview Skills
C. Professionalism
   1. Clients and fellow staff members
   2. High-quality patient care
D. Career Choices for Veterinary Technicians
E. Professional Development and Lifelong Learning Opportunities
F. Critical Thinking
   1. Documentation and the veterinary technician practice model
   2. Comprehensive SOAP (subjective, objective, assessment, plan) documentation skills

G. Application of Veterinary Technology Profession's Ethical Code

VII. Suggested Text(s)

Howard, V. (1995). *Veterinary technician placement program.* Dayton, OH: Iams.*

Rockett, J., & Lattanzio, C., & Christensen, C. (2013). *The veterinary technician's guide to writing SOAPs.* Heyburn, ID: Rockett House Publishing.

Shadle, C., & Meyer, J. (2011). *Communication case studies: Building interpersonal skills in the veterinary practice.* Lakewood, CO: AAHA Press.

VIII. Bibliography

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Boss, N. (2008). *How we do things here: Developing and teaching office-wide protocols* [CD-ROM]. Lakewood, CO: AAHA Press.

Colville, T. (2003). *Review questions & answers for veterinary technicians* (3rd ed.). St. Louis, MO: Mosby.*

Durrance, D., & Lagoni, L. (2010). *Connecting with clients: Practical communication for 10 common situations* (2nd ed.). Lakewood, CO: AAHA Press.

Judah, V. (2012). *Veterinary office practices* (2nd ed.). Clifton Park, NY: Delmar Cengage Learning.

Pattengale, P. (2009). *Tasks for the veterinary assistant* (2nd ed.). Ames, IA: Wiley-Blackwell.

Prendergast, H. (2011). *Front office management for the veterinary team*. St. Louis, MO: Elsevier.

Rockett, J., & Christensen, C. (2011). *Case studies in veterinary technology workbook.* Heyburn, ID: Rockett House Publishing.

Rockett, J., Lattanzio, C., & Anderson, K. (2009). *Patient assessment, intervention, and documentation for the veterinary technician.* Clifton Park, NY: Delmar Cengage Learning.

Rose, R., & Smith, C. (2013). *Career choices for veterinary technicians: Opportunities for animal lovers* (rev. ed.). Lakewood, CO: AAHA Press.

Rosenfeld, A. J. (2007). *Veterinary medical team handbook*. Ames, IA: Wiley-Blackwell.

Sirosis, M. (2010). *Principles and practice of veterinary technology* (3rd ed.). St. Louis, MO: Mosby.

*Classic text

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A244	None	1.0	(1+0)

6. Complete Course Title
Veterinary Technician National Exam Preparation
Vet Tech National Exam Prep
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/10/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Describes and applies study strategies and test-taking skills for successfully completing the Veterinary Technician National Exam (VTNE). Reviews all VTCH curricula content and related practice tests.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
None

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date
Karen L. Carpenter, DVM
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A.	College:	Matanuska-Susitna College
B.	Course Prefix:	VTCH – Veterinary Technology
C.	Course Number:	A244
D.	Credits/Contact Hours:	1.0 (1+0) Contact Hours
E.	Course Title:	Veterinary Technician National Exam Preparation
F.	Grading:	A-F
G.	Implementation Date:	Spring 2017
H.	Cross Listing:	Not applicable
I.	Stacking:	Not applicable

J. Course Description:
Describes and applies study strategies and test-taking skills for successfully completing the Veterinary Technician National Exam (VTNE). Reviews all VTCH curricula content and related practice tests.

K.	Course Attributes:	Not applicable
L.	Course Requirements:	
	i. Prerequisites:	(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C
	ii. Co-requisites:	None
	iii. Registration Restrictions:	Acceptance into AAS Veterinary Technology Program
M.	Course Fee:	Yes

III. Course Level Justification

This course is a review of all previously covered material in the VTCH curricula.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Outline study strategies for successful test taking
- Discuss test-taking strategies including dealing with test anxiety
- Assist students with applying study strategies for reviewing all topics covered in the program
- Administer VTNE practice tests
- Evaluate, review, and discuss practice test results based on test-taking strategies for improving future test performance

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Explain and demonstrate study strategies for successful test taking	Class discussion, written assignments, quizzes, and exams
Describe test-taking strategies including dealing with test anxiety	Class participation, quizzes, and exams
Apply study strategies for reviewing all topics covered in the program	Class participation, written assignments, quizzes, and exams
Apply test-taking strategies to VTNE practice tests	Class participation and exams
Improve future VTNE practice-test performance in preparation for actual exam	Class discussion, written assignments, and exams

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for this program and possibly this course. Other assessment tools are at the instructor's discretion and may include attendance, quizzes, written and oral assignments, class discussion and participation, and exams.

VI. Topical Course Outline

A. Test-Taking Strategies
   1. Study strategies
   2. Testing strategies
   3. Multiple-choice testing strategies
   4. Dealing with test anxiety

B. Basic and Clinical Sciences
   1. Veterinary anatomy and physiology
   2. Urinalysis and hematology
   3. Cytology
   4. Parasitology
   5. Microbiology
   6. Clinical chemistry

C. Clinical Applications
   1. Restraining and handling
   2. Facility maintenance
   3. Diagnostic imaging

D. Patient Management and Nutrition
   1. Life-stage patient care
   2. Behavior
   3. Large and small animal nutrition
   4. Laboratory and exotic animal medicine

E. Anesthesia and Pharmacology
   1. Anesthesia
   2. Pharmacology
   3. Calculations

F. Medical and Surgical Nursing
   1. Surgical preparation and instrument care
   2. Small animal nursing
   3. Large animal nursing
   4. Dentistry
   5. Emergency medicine

G. Practice Management
   1. Self-management
   2. Professional management
   3. Veterinary ethics

VII. Suggested Text(s)

Kesselman-Turkel, J., & Peterson, F. (2004). *Test-taking strategies* (2nd ed.). Madison, WI: University of Wisconsin Press.*

Tighe, M. M., & Brown, M. (2008). *Mosby's comprehensive review for veterinary technicians* (3rd ed.). St. Louis, MO: Mosby.

VIII. Bibliography

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Colville, T. P. (2010). *Review questions and answers for veterinary technicians* (4th ed.). St. Louis, MO: Mosby.

*Classic text

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
MA Mat-SU	choose one	

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
VTCH	A295	None	3.0	(0+9)

6. Complete Course Title
Clinical Externship II
Clinical Externship II
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 05/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04/11/2014

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Combines veterinary clinical skills with theoretical knowledge to complete student preparation for licensure and employment opportunities after graduation.
Special note: Requires 45 hours of work experience for each credit (135 approved hours).

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
(VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH A233, and VTCH A233L) with a minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
None

16c. Other Restriction(s)
☐ College ☒ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Acceptance into AAS Veterinary Technology Program

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is required as part of the curricula needed to obtain accreditation by the American Veterinary Medical Association (AVMA) for an Associates of Applied Science Degree in Veterinary Technology.

Initiator (faculty only) Date Karen L. Carpenter, DVM Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: June 2013

II. Course Information

A. College: Matanuska-Susitna College
B. Course Prefix: VTCH – Veterinary Technology
C. Course Number: A295
D. Credits/Contact Hours: 3.0 (0+9) Contact Hours
E. Course Title: Clinical Externship II
F. Grading: A-F
G. Implementation Date: Spring 2017
H. Cross Listing: Not applicable
I. Stacking: Not applicable
J. Course Description:
Combines veterinary clinical skills with theoretical knowledge to complete student preparation for licensure and employment opportunities after graduation. **Special note:** Requires 45 hours of work experience for each credit (135 approved hours).
K. Course Attributes: Not applicable
L. Course Requirements:
i. Prerequisites: (VTCH A130, VTCH A231, VTCH A231L, VTCH A232, VTCH A232L, VTCH 233, and VTCH A233L) with a minimum grade of C
ii. Co-requisites: None
iii. Registration Restrictions: Acceptance into AAS Veterinary Technology Program
M. Course Fee: Yes

III. Course Level Justification

Knowledge and skills acquired throughout veterinary technology curricula culminate in this capstone course.

IV. Instructional Goals, Student Outcomes and Assessment Procedures

A. Instructional Goals:
The instructor will:

- Explain course and faculty expectations including attendance, time-log maintenance, journaling, communication, professionalism, ambassadorship, dress, appearance, and confidentiality
- Review student clinical skills self-assessment forms
- Query students regarding externship expectations, concerns, and previous experiences

- Describe safety and risk-management procedures including incident report submission, insurance coverage, and medical-care protocol for externship incidents
- Provide additional opportunity for applying theoretical knowledge and acquired skills in a veterinary facility
- Coordinate with externship supervisor to ensure that student works out a learning agreement, is informed of externship supervisor expectations, and develops a work schedule
- Orchestrate ongoing communication among faculty, externship supervisors, and students concerning workplace performance and challenges
- Provide opportunity for students to share workplace experiences
- Monitor and mentor student performance during externship
- Provide opportunity for final work-performance evaluations and students' evaluations of experiences and externship sites

B. Student Learning Outcomes. Student will be able to:

Student Learning Outcomes and Assessment Measures	
Student Learning Outcomes	**Measures**
Describe and model course and faculty expectations including attendance, time-log maintenance, journaling, communication, professionalism, ambassadorship, dress, appearance, and confidentiality	Written and oral assignments, quizzes, exams, and externship supervisor evaluation
Complete forms to assess their competency levels before and after externship	Written reports
Explain safety and risk-management procedures including incident report submission, insurance coverage, and medical-care protocol for externship incidents	Written and oral assignments, quizzes, and exams
Describe externship supervisor expectations	Class discussion
Observe and practice veterinary technician, management, and client relations skills in a veterinary facility setting	Class participation, journaling, externship supervisor evaluation, and possible completion of Skills List* tasks
Communicate workplace performance and challenges to faculty and externship supervisors	Journaling, oral assignments, and externship site evaluation
Discuss workplace experiences in a group setting	Class participation and written and oral assignments
Perform veterinary technician duties as assigned by externship supervisor	Externship supervisor evaluation and possible completion of Skills List tasks
Identify strengths, weaknesses, and lessons learned	Self-reflection

* "Skills List" refers to The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List.

V. Guidelines for Evaluation or Assessment Methods

The Committee on Veterinary Technician Education and Activities (CVTEA) Essential and Recommended Skills List, reviewed annually, is a required assessment tool for the program and a possible assessment tool for this course dependent on availability of program instructors for evaluation of skills. Other assessment tools are at the instructor's discretion and may include class participation; attendance; written and oral assignments; quizzes; exams; student self-assessment; and externship supervisor evaluation of work habits, attitude, appearance, professionalism, demonstration, and competency of skills.

VI. Topical Course Outline

A. Externship Orientation
   1. Externship site selection and placement
   2. Course and faculty expectations
      a. Attendance and professionalism
      b. Ambassadorship
      c. Dress and appearance
      d. Confidentiality
      e. Student self-assessment of competence level before and after externship
      f. Time-log maintenance
      g. Journaling
      h. Communication with other students
   3. Communication essential to successful relationship between faculty, externship supervisors, and students
   4. Student concerns and expectations
   5. Safety and risk management

B. Placement in a Veterinary Facility
   1. Initial interview process
   2. Learning agreement
   3. Externship supervisor expectations
   4. Work schedule

C. Continuing Communication among Faculty, Externship Supervisors, and Students Regarding Workplace Performances and Challenges

D. Student Sharing of Workplace Experiences

E. Student Observation and Practice of Fundamental Skills Learned to Date
   1. Veterinary technician skills
      a. Pharmacy
      b. Imaging
      c. Nursing
      d. Anesthesia
      e. Surgical nursing
      f. Diagnostic imaging
      g. Dentistry
      h. Laboratory procedures
   2. Management skills
      a. Schedule appointments
      b. Triage, admit, and discharge procedures

c. Emergency situations
d. Medical records
e. Inventory control
f. Sanitation protocols
g. Regulatory agencies roles

3. Client relations
   a. Communication of patient and/or facility needs through phone and personal contact
   b. Relay drug information to clients
      1) Storage
      2) Handling
      3) Administration
      4) Side effects
      5) Drug interactions
      6) Safety
      7) Indications for drug use
      8) Disposal
   c. Client advice for diagnostic testing
      1) Value
      2) Procedures
      3) Results
   d. Billing and finances

F. Final Evaluation of Work Performance and Externship Experience
   1. Areas of strength
   2. Areas needing improvement
   3. Lessons learned

VII. Suggested Text(s)

Bauer, M. (2010). *The veterinary technician's pocket partner.* Clifton Park, NY: Delmar, Cengage Learning.

VIII. Bibliography

Bassert, J., & Thomas, J. (2013). *Clinical textbook for veterinary technicians* (8th ed.). St. Louis, MO: Elsevier.

Crow, S. E., Walshaw, S. O., & Boyle, J. E. (2009). *Manual of clinical procedures in dogs, cats, rabbits, & rodents* (3rd ed.). Ames, IA: Wiley-Blackwell.

Jack, C. M., Watson, P. M., & Donovan, M. S. (2008). *Veterinary technician's daily reference guide: Canine and feline* (2nd ed.). Ames, IA: Wiley-Blackwell.

Pattengale, P. (2009). *Tasks for the veterinary assistant* (2nd ed.). Hoboken, NJ: Wiley-Blackwell.

Plumb, D. C. (2011). *Plumb's veterinary drug handbook* (7th ed.). Ames, IA: Wiley-Blackwell.

Prendergast, H. (2010). *Front office management for the veterinary team*. St. Louis, MO: Elsevier.

Romich, J. A. (2010). *Fundamentals of pharmacology for veterinary technicians* (2nd ed.). Clifton Park, NY: Cengage Learning.

Sirois, M. (2013). *Mosby's veterinary pdq* (2nd ed.). St. Louis, MO: Elsevier.

Tear, M. (2012). *Small animal surgical nursing skills and concepts* (2nd ed.). St. Louis, MO: Elsevier.

Mat-Su College
UNIVERSITY of ALASKA ANCHORAGE

To: Undergraduate Academic Board

From: Karen L. Carpenter, DVM, Term Assistant Professor of Science, Matanuska-Susitna College klc

Date: 13 June 2014

Subject: Proposal for an Associate of Applied Science Degree Program in Veterinary Technology

This proposal is to establish an Associate of Applied Science Degree Program in Veterinary Technology at Matanuska-Susitna College. Alaska is one of only two states that do not currently have at least one American Veterinary Medical Association (AVMA)-accredited veterinary technology degree program, and Alaska's veterinary industry would like to fill that void. The proposed program follows the guidance established by the AVMA's Committee on Veterinary Technician Education and Activities (CVTEA). Students admitted to the program will be required to complete the following courses, which include two externships, as part of the proposed degree. CCGs and CARs for each of these courses are included in this curriculum package.

*VTCH A101	Introduction to Veterinary Technology	(1+0)	1 credit
*VTCH A102	Veterinary Medical Terminology	(1+0)	1 credit
VTCH A110	Medical Calculations for Veterinary Technicians	(1+0)	1 credit
VTCH A111	Veterinary Office Procedures and Hospital Management	(3+0)	3 credits
VTCH A112	Veterinary Anatomy and Physiology	(3+0)	3 credits
VTCH A112L	Veterinary Anatomy and Physiology Laboratory	(0+3)	1 credit
VTCH A113	Veterinary Nursing Skills	(3+0)	3 credits
VTCH A113L	Veterinary Nursing Skills Laboratory	(0+3)	1 credit
VTCH A120	Pharmacology for Veterinary Technicians	(2+0)	2 credits
VTCH A121	Small Animal Medicine	(3+0)	3 credits
VTCH A122	Veterinary Surgical Nursing	(3+0)	3 credits
VTCH A122L	Veterinary Surgical Nursing Laboratory	(0+3)	1 credit
VTCH A223	Veterinary Microbiology and Parasitology	(3+0)	3 credits
VTCH A223L	Veterinary Microbiology and Parasitology Laboratory	(0+3)	1 credit
VTCH A195	**Clinical Externship I (135 contact hours)**	**(3+0)**	**3 credits**
VTCH A130	Applied Small Animal Behavior I	(1+0)	1 credit
VTCH A231	Veterinary Diagnostic Imaging and Dentistry	(2+0)	2 credits
VTCH A231L	Veterinary Diagnostic Imaging and Dentistry Laboratory	(0+3)	1 credit
VTCH A232	Veterinary Anesthesia and Analgesia	(3+0)	3 credits
VTCH A232L	Veterinary Anesthesia and Analgesia Laboratory	(0+3)	1 credit
VTCH A233	Veterinary Clinical Pathology	(3+0)	3 credits
VTCH A233L	Veterinary Clinical Pathology Laboratory	(0+3)	1 credit
VTCH A240	Applied Small Animal Behavior II	(1+0)	1 credit
VTCH A241	Laboratory and Exotic Animal Medicine	(2+0)	2 credits
VTCH A241L	Laboratory and Exotic Animal Medicine Laboratory	(0+3)	1 credit
VTCH A242	Large Animal Medicine and Clinical Procedures	(2+0)	2 credits
VTCH A242L	Large Animal Medicine and Clinical Procedures Laboratory	(0+3)	1 credit
VTCH A243	Career Success as a Veterinary Technician	(1+0)	1 credit
VTCH A244	Veterinary Technician National Exam Preparation	(1+0)	1 credit
VTCH A295	**Clinical Externship II (135 contact hours)**	**(3+0)**	**3 credits**
TOTAL			54 CREDITS

*Admission prerequisites

Along with VTCH A101 and VTCH A102, students will also need COMM (3 credits), ENGL A111 (3 credits), BIOL (4 credits), MATH A105 (3 credits), and CHEM A055 or higher as prerequisites for acceptance into the program. They will also need 3 credits of PSY and a 3-credit, 200-level ENGL course before they graduate for a **TOTAL of 73 CREDITS**.

Please contact me at 907-745-9771 or klcarpenter@matsu.alaska.edu with any questions. Thank you for your consideration.

Program/Prefix Action Request
University of AlaskaAnchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

1a.School or College MA Mat-SU	1b. Department

2. Complete Program Title/Prefix
Associate of Applied Science in Veterinary Technology

3. Type of Program

Choose one from the appropriate drop down menu: Undergraduate: Associate of Applied Science or Graduate: CHOOSE ONE

This program is a Gainful Employment Program: ☐Yes or ☒No

4. Type of Action:

PROGRAM	**PREFIX**
☒Add	☐Add
☐Change	☐Change
☐Delete	☐Inactivate

5. Implementation Date (semester/year)
From: Fall/2015 To: /9999

6a. Coordination with Affected Units Department, School, or College:

Initiator Name (typed): Karen L. Carpenter, DVM Initiator Signed Initials: _____
Date:_____

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu) Date: 5/07/2014

6c. Coordination with Library Liaison Date: 4/11/2014

7. Title and Program Description - Please attach the following:

☒Cover Memo ☒Catalog Copy in Word using the track changes function

8. Justification for Action

The State of Alaska has no American Veterinary Medical Association (ACMA) accredited veterinary technician program. In 2010, veterinarians and veterinary technicians were surveyed at the Alaska Veterinary Medical Association conference; 98% of respondents supported developing an AVMA-accredited veterinary technology program and indicated they would hire our graduates. The Alaska veterinary community is required to hire licensed veterinary technicians to perform advanced procedures. Presently, trainees can receive licensure after on-the-job training and passing the Veterinary Technician National Exam (VTNE); however, veterinary technician licensing laws may soon require those wanting licensure to complete an accredited veterinary technician program before sitting for the VTNE. According to the Rochester Institute of Technology's (RIT) report, "Job Outlook to 2018 For Today's College Graduate," employment prospects for veterinarians will increase by 33%. This increase in future jobs for veterinarians will mandate a need for more veterinary technicians to support them—both in Alaska and across the country. According to the United States Department of Labor Bureau of Labor Statistics, the job opportunities for veterinary technicians and technologists are excellent and are "expected to grow by 36 percent over the 2008-18 projection period, which is much faster than the average for all occupations" (http://www.bls.gov/oco/ocos183.htm). Furthermore, veterinary technicians not only support veterinarians in clinics, but they also have many other career options, such as conducting research or working in military service, food safety, teaching, zoos, and aquariums. An

AVMA-accredited veterinary technology program would provide its graduates a two-year associate of applied science degree in veterinary technology.

Initiator (faculty only)	Date	☐ Approved ☐ Disapproved	Dean/Director of School/College — Date
Karen L. Carpenter, DVM Initiator (TYPE NAME)			
☐ Approved ☐ Disapproved	Department Chair — Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair — Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair — Date	☐ Approved ☐ Disapproved	Provost or Designee — Date

VETERINARY TECHNOLOGY

Matanuska-Susitna College (MSC)
8295 East College Drive (P.O. Box 2889), Palmer AK 99645
Contact Karen L. Carpenter, DVM (907) 745-9771
matsu.alaska.edu/office/student-services/degree-programs/veterinary-technology

Veterinary technicians are indispensable members of the professional veterinary medical team and provide animal health care and education to our community. They work in clinics, animal hospitals, animal shelters, zoos, and research facilities. In addition to being team members, they must also work independently and respond quickly in emergencies. Veterinary technicians are educated and trained to be contributing professionals supporting the needs of animals as patients and people as clients.

The program follows the educational guidelines of the American Veterinary Medical Association (AVMA) and is in the process of gaining accreditation. Upon accreditation, the program will prepare students to sit for the Veterinary Technician National Exam (VTNE) leading towards Veterinary Technician Licensure.

In the Veterinary Technology AAS program, students gain knowledge and technical skills for handling, treating, and providing nursing care necessary for effective patient management. Students will develop the skills essential for assisting veterinarians during treatment and surgery, including small, large, and exotic animal medicine; laboratory and clinical procedures; diagnostic imaging; dental hygiene; anesthesia and surgical nursing; pharmacology; proper positioning and restraint; nutritional management and husbandry; routine and emergency care; safety protocols; prevention of zoonotic diseases; grief management counseling; and applied animal behavior. Students also learn techniques for effective communication, both orally and in writing, with the veterinary team, clients, and the community.

Two primary requirements of the Veterinary Technology program are a mid-program clinical externship and a capstone clinical externship. Both clinical externships provide opportunities to apply learned skills in a clinical setting. These externships will be completed in clinics around the state and in other U.S. locations. Efforts are made to place students in geographic locations of their choice; however, externship positions may not be available at all approved sites.

Associate of Applied Science, Veterinary Technology

Program Student Learning Outcomes

MSC's AAS Veterinary Technology program curricula follow the outcomes outlined in the Essential and Recommended Skills List of the American Veterinary Medical Association's (AVMA's) Committee on Veterinary Technician Education and Activities (CVTEA). The students and the program will be assessed by an external review team (AVMA's CVTEA) on each of those specific skills.

Upon completion of the Associate of Applied Science degree program in Veterinary Technology, students will be prepared to:

1. Participate in facility management utilizing traditional and electronic media and appropriate veterinary medical terminology and abbreviations.
2. Communicate in a professional manner in all formats.
3. Follow and uphold applicable laws and the veterinary technology professional code of ethics to provide high quality care to patients.
4. Safely and effectively administer prescribed drugs to patients.
5. Accurately dispense and explain prescribed drugs to clients.
6. Demonstrate and perform patient assessment techniques in a variety of animal species.
7. Understand and demonstrate husbandry, nutrition, therapeutic, and dentistry techniques appropriate to various animal species.
8. Safely and effectively manage and maintain patients in all phases of anesthesia.
9. Safely and effectively select, utilize, and maintain anesthetic delivery and monitoring instruments and equipment.
10. Understand and integrate all aspects of patient management for common surgical procedures in a variety of animal species.

11. Understand and provide the appropriate instruments, supplies, and environment to maintain asepsis during surgical procedures.
12. Properly package, handle, and store specimens for laboratory analysis.
13. Properly analyze laboratory specimens.
14. Safely and effectively produce diagnostic radiographic and non-radiographic images.
15. Safely and effectively handle common laboratory animals used in animal research.
16. Understand the approach to providing safe and effective care for small and large domestic animals and common laboratory and exotic animals.
17. Model professional behavior, including risk management, time management, and respect for patients, clients, and colleagues.
18. Seek, obtain, evaluate, and use scientific literature and professional development opportunities relevant to veterinary technology for engaging in lifelong learning.
19. Promote the profession of veterinary technology through professional organization service and affiliations.

Admission Requirements

Matanuska-Susitna College - Admission Requirements

Advising for this Mat-Su College (MSC) program is only available from MSC Student Services. Please call (907) 745-9762 for more information.

Admission to the MSC Veterinary Technology program is competitive and based on a ranking process. Program applications can be requested through the Veterinary Technology department or downloaded via the Internet. Application requirements must be completed prior to the published application deadline.

Students should consider applying for admission as a "pre-major" in Veterinary Technology while enrolled in Veterinary Technology degree prerequisite courses. While being a pre-major is not required, students may be eligible for financial aid as pre-majors are considered to be degree-seeking students.

Admission as a Veterinary Technology pre-major does not guarantee admission to the Veterinary Technology degree program. Applications for major status must be submitted by the published deadline. Formal admission requirements to the Veterinary Technology AAS degree program are listed below.

Admission Requirements for Veterinary Technology Degree

1. Student must attend an advising session with the MSC Veterinary Technology coordinator. Contact the campus for an appointment.
2. VTCH A101 with a grade of C or better; this class functions both as an introduction to the profession and as an application assessment tool.
3. VTCH A102 with a grade of C or better
4. CHEM A055 or any CHEM course for which CHEM A055 is in the prerequisite chain with a grade of C or better
5. Completion of the following General Course Requirements for Associate of Applied Science Degree with a C or better in each class:
    a. Biology with laboratory from Natural Science UAA GER list (BIOL A102 and BIOL A103 or BIOL A115 and BIOL A115L are preferred)
    b. Oral Communication Skills GER
    c. ENGL A111 or ENGL A1W-Written Communication GER
    d. MATH A105 or any MATH course for which MATH A105 is in the prerequisite chain
6. Cumulative GPA of 2.00 or better in all courses (all program requirements and all prior coursework)
7. Admission essay
8. Résumé with three letters of recommendation

Selection criteria change periodically in response to AVMA guidelines. Applicants must contact the program or MSC Student Services for selection criteria for the year they wish to apply. Completion of the admissions requirements does not guarantee

selection into the Veterinary Technology AAS degree program. Applicants transferring credits from another institution benefit by applying for admissions in the pre-major status a semester prior to the application deadline. This allows sufficient time for transcript evaluation processing.

Further details regarding the selection process can be found in the Veterinary Technology AAS Student Handbook.

Admission Requirements before Beginning Coursework

Upon admission to the Veterinary Technology program, students are required to provide the following before beginning course work:

1. Documentation from personal physician, PA-C, or NP affirming capability of performing the physical tasks required for the program as outlined in the Veterinary Technology AAS Student Handbook
2. Evidence of diphtheria/tetanus vaccination within the past 10 years (with booster required at the time of expiration)
3. Professional liability insurance in the amount of $1 million/$3 million (to be maintained throughout the duration of the student's enrollment in the Veterinary Technology program. The policy will be paid out of student fees.
4. Accident insurance throughout the duration of the student's enrollment in the Veterinary Technology program. The policy will be paid out of student fees.
5. Results of a state- and national-level criminal background check. Must be completed prior to the start of courses. This process can take several months to complete.
6. Test results documenting that the student is free of illegal drugs. Tests must be taken and results submitted to the Veterinary Technology coordinator between the student's date of acceptance into the program and the first day of class.

Students enrolled in clinical courses must provide their own transportation to clinical assignments and will be required to purchase uniforms and specialized equipment. The college assumes no responsibility for illnesses and injuries experienced by students in conjunction with their clinical experiences; students who are injured while completing clinical assignments are responsible for all associated medical costs. No workers compensation will be awarded if injured on a clinical site or during the field internship. It is strongly recommended that students maintain personal medical insurance.

Academic Progress

1. Students are required to earn a grade of 2.00 C or higher in each VTCH course for all courses required. Failure to maintain a passing grade of C will result in dismissal from the program.
2. Students MUST complete all of the VTCH classes through VTCH A240, their 200-level English course, and their psychology course before they register for their final externship (VTCH A295). Students must have all of the VTCH classes through VTCH A244 completed before beginning the final externship (VTCH A295).
3. The veterinary technology program admits students into a program cohort. Thus, if a student leaves the program for any reason, the student will not be able to resume the program until the next cohort starts.

General University Requirements

Complete the General University and the General Course Requirements for Associate of Applied Science Degrees located at the beginning of this chapter.

Communication Requirements (9 credits)

Oral communication (3 credits)

Oral communication skills GER is a required prerequisite and fulfills the oral communication requirement (3)

Written communication (6 credits)

ENGL A111 or ENGL A1W-Written Communication GER is a required prerequisite and fulfills the 100-level written communication requirement (3)

ENGL A211, ENGL A212 (preferred), ENGL A213, or ENGL A214 will fulfill the 200-level written communication requirement (3)

General Requirements (6 credits)

Natural Science Requirements (4 credits)

Biology with laboratory from the Natural Science UAA GER list (BIOL A102 and BIOL A103 or BIOL A115 and BIOL A115L are preferred) is a required prerequisite and fulfills part of the general requirements (4)

Math Requirements (3 credits)

MATH A105 or any MATH course for which MATH A105 is in the prerequisite chain is a required prerequisite and fulfills part of the general requirements (3)

Major Requirements (57 credits)

PSY AXXX	Psychology class from UAA GR list (PSY A153 or A150 preferred)	3
VTCH A101	Introduction to Veterinary Technology	1
VTCH A102	Veterinary Medical Terminology	1
VTCH A110	Medical Calculations for Veterinary Technicians	1
VTCH A111	Veterinary Office Procedures and Hospital Management	3
VTCH A112	Veterinary Anatomy and Physiology	3
VTCH A112L	Veterinary Anatomy and Physiology Laboratory	1
VTCH A113	Veterinary Nursing Skills	3
VTCH A113L	Veterinary Nursing Skills Laboratory	1
VTCH A120	Pharmacology for Veterinary Technicians	2
VTCH A121	Small Animal Medicine	3
VTCH A122	Veterinary Surgical Nursing	3
VTCH A122L	Veterinary Surgical Nursing Laboratory	1
VTCH A223	Veterinary Microbiology and Parasitology	3
VTCH A223L	Veterinary Microbiology and Parasitology Laboratory	1
VTCH A195	Clinical Externship I	3
VTCH A130	Applied Small Animal Behavior I	1
VTCH A231	Veterinary Diagnostic Imaging and Dentistry	2
VTCH A231L	Veterinary Diagnostic Imaging and Dentistry Laboratory	1
VTCH A232	Veterinary Anesthesia and Analgesia	3
VTCH A232L	Veterinary Anesthesia and Analgesia Laboratory	1
VTCH A233	Veterinary Clinical Pathology	3
VTCH A233L	Veterinary Clinical Pathology Laboratory	1
VTCH A240	Applied Small Animal Behavior II	1
VTCH A241	Laboratory and Exotic Animal Medicine	2
VTCH A241L	Laboratory and Exotic Animal Medicine Laboratory	1
VTCH A242	Large Animal Medicine and Clinical Procedures	2
VTCH A242L	Large Animal Medicine and Clinical Procedures Laboratory	1
VTCH A243	Career Success as a Veterinary Technician	1
VTCH A244	VTNE Preparation	1
VTCH A295	Clinical Externship II	3

A total of 73 credits is required for the degree.

FACULTY

Karen L. Carpenter, DVM, Coordinator/Assistant Professor of Science (MSC), klcarpenter@matsu.alaska.edu

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A336	NA	3	(3+0)

6. Complete Course Title
Peoples and Cultures of Scandinavia

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☐ Change *or* ☒ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status choose one # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2014 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with

Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anthropology BA	10/31/2013	Paul White
2. Anthropology BS	10/31/2013	Paul White
3.		

Initiator Name (typed): Steve J. Langdon Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: _____

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Cultural history and variations of Scandinavian peoples including their origins, prehistory, biological affiliations, major migrations, and selected current issues.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
NA

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Program consolidation and revision, involving streamlining of course offerings for students.

Initiator (faculty only) Date
Steve J. Langdon
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A415	N/A	3	(3+0)

6. Complete Course Title
Applied Anthropology

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2014 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with A615 _____ Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. BA/BS Anthropology	10/31/2013	Paul White
2.		
3.		

Initiator Name (typed): Sally Carraher Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/2013

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Applied anthropology, theory, methods, and the history of applied anthropology in the United States, with an emphasis on applying anthropology for social justice in Alaska. Students will conduct a local research project as a team through engagement with community institutions, thereby learning the methods of applying anthropology to solve contemporary sociocultural issues and problems.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
ANTH A202, minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Updating course description and classroom approach to keep up with innovative teaching strategies being used for similar courses at other universities. Updating prerequisites to ensure students have taken Cultural Anthropology (ANTH A202).

Initiator (faculty only) Date
Sally Carraher
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Date of initiation: October, 2013

II. A. College or school: CAS
B. Course title: Applied Anthropology
C. Course prefix: ANTH
D. Course number: A415
E. Credits and Contact hours: 3.0 credits, 3+0 contact hours
F. Grading: A-F
G. Stacking: ANTH A615
H. Course description: Applied anthropology, theory, methods, and the history of applied anthropology in the United States, with an emphasis on applying anthropology for social justice in Alaska. Students will conduct a local research project as a team through engagement with community institutions, thereby learning the methods of applying anthropology to solve contemporary sociocultural issues and problems.
I. Course prerequisites: ANTH A202, with minimum grade of C
J. Registration restrictions: none
K. Course fee: No

III. Course activities/teaching methods:
Course will be offered every other academic year. Each time course is offered, the instructor will have identified a local client and research project, and the main research focus/question for the class to work on as a team. Students work collaboratively with the client to identify specific research questions, project timeline, project data collection methods (i.e. open or structured interviews, focus groups, questionnaire surveys, oral histories, life histories, archival research), and develop project deliverables for the client (i.e. a final report, a web site, pamphlets, public presentation, community education materials). Through this approach, students learn through personal experience how to actually do applied anthropological research with an emphasis on promoting social justice in Alaska. In addition to providing educational materials about the theory, methods, and history of applied anthropology, the instructor serves as a facilitator and mediator for students and the project client.

IV. Instructional goals and student learning outcomes:
A. The instructor will:
1. Explain the core concepts, historical developments, methods employed, and major results of applying anthropological theory and method to the understanding and amelioration of sociocultural problems or challenges in Alaska, the US, and worldwide.
2. Identify and discuss the major subfields in applied anthropology, and the kinds of employment available in each related to one's educational achievement and experience.

3. Explain the ethical principles required of applied and practicing anthropologists, proving illustrations of both appropriate and unethical activity in the field.
4. Serve as a project facilitator and a mediator between students the client.
5. Prior to the start of the semester, the instructor will identify a client (person, community group, or organization) in the Anchorage/Mat-Su area, and work with the client to identify the main research topic and people who will be involved in the project (i.e. interviewees).
6. Prior to the start of the semester, the instructor will obtain IRB and any other necessary approvals/licenses, as well as project funding (if needed).

B. The student will be able to:
1. Discuss the core concepts, historical developments, methods and results of applying anthropological theory and method to sociocultural problems.
2. Discuss the development, activities appropriate to, and notable results of applied anthropology.
3. Discuss the ethical principles adhered to in this field.
4. Demonstrate competency in types of methods commonly used in applied anthropology.
5. Demonstrate competency in designing, carrying out, and analyzing anthropological research with an applied focus; and in the development and dissemination of research deliverables to a client.
6. Work effectively as a part of team.

V. Topical course outline:
1. Introduction and overview; distinction between basic and applied anthropological research
2. History and kinds of applied anthropology, globally, in the US, and with a special emphasis on Alaska
3. Ethics in applied research and practice
4. Method and theory in applied anthropology:
    a. Ethnography, participant observation, key-informant interviewing, oral and life histories, qualitative analyses
    b. Focus groups, questionnaire surveys, quantitative analyses
5. Research design and process:
    a. Identifying core research problem and developing specific research questions to answer the problem
    b. Time management and troubleshooting
    c. Population sampling techniques
    d. Designing research instruments (surveys, interviews)
    e. Storing, organizing, coding, and analyzing data

f. Writing research dissemination materials for clients and public audiences

VI. Suggested texts:

Beck & Maida. 2013. Toward Engaged Anthropology.

Ervin. 2004. Applied Anthropology: Tools and Perspectives for Contemporary Practice, 2nd edition.

Podolefsky, Brown, & Lacy, eds. 2013. Applying Cultural Anthropology: An Introductory Reader, 9th edition.

VII. Bibliography:

American Anthropological Association Ethical Guidelines. 1998. http://www.aaanet.org/committees/ethics/ethcode.html.

Baer, Singer & Susser. 2003. Medical Anthropology and the World System.

Benard. 2006. Research Methods in Anthropology, 4th edition.

Denzin, Lincoln, & Smith. 2008. Handbook of Critical and Indigenous Methodologies.

Feldman, Langdon & Natcher. 2005. Northern Engagement: Alaskan Society and Applied Cultural Anthropology, 1973-2003. *Alaska Journal of Anthropology* 3(1):121-155.

Henry & Manoochehri. 2010. On Becoming an Applied Anthropologist: Collaboration and Clients in the Classroom. *Practicing Anthropology* 32(2):26-30.

Hill & Baba, eds. 2000. The Unity of Theory and Practice in Anthropology: Rebuilding a Fractured Synthesis. *NAPA Bulletin* No. 18.

US Department of Health, Education, and Wealth. 2010. The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research. http://ohsr.od.nih.gov/guidelines/belmont.html.

Wheeler & Thorton. 2005. Subsistence Research in Alaska: A Thirty Year Retrospective. *Alaska Journal of Anthropology* 3(91)69-103.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A615	N/A	3	(3+0)

6. Complete Course Title
Advanced Applied Anthropology

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2014 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with A415 _____ Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anthropology MA	10/31/2013	Paul White
2.		
3.		

Initiator Name (typed): Sally Carraher Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/2013

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Advanced applied anthropology, theory, methods, and the history of applied anthropology in the United States, with an emphasis on applying anthropology for social justice in Alaska. Students will conduct a local research project as a team through engagement with community institutions, thereby learning the methods of applying anthropology to solve contemporary sociocultural issues and problems.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
Anth 202 completed with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Graduate standing

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Updating course description and classroom approach to keep up with innovative teaching strategies being used for similar courses at other universities. Updating prerequisites to ensure students have taken Cultural Anthropology (ANTH202).

Initiator (faculty only) Date
Sally Carraher
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Date of initiation: October, 2013

II. A. College or school: CAS
B. Course title: Applied Anthropology
C. Course prefix: ANTH
D. Course number: A615
E. Credits and Contact hours: 3.0 credits, 3+0 contact hours
F. Grading: A-F
G. Stacking: ANTH A415
H. Course description: Advanced applied anthropology, theory, methods, and the history of applied anthropology in the United States, with an emphasis on applying anthropology for social justice in Alaska. Students will conduct a local research project as a team through engagement with community institutions, thereby learning the methods of applying anthropology to solve contemporary sociocultural issues and problems.
I. Registration restrictions: Graduate standing
J. Course fee: No

III. Course activities/teaching methods:
Course will be offered every other academic year. Each time course is offered, the instructor will have identified a local client and research project, and the main research focus/question for the class to work on as a team. Students work collaboratively with the client to identify specific research questions, project timeline, project data collection methods (i.e. open or structured interviews, focus groups, questionnaire surveys, oral histories, life histories, archival research), and develop project deliverables for the client (i.e. a final report, a web site, pamphlets, public presentation, community education materials). Through this approach, students learn through personal experience how to actually do applied anthropological research with an emphasis on promoting social justice in Alaska. In addition to providing educational materials about the theory, methods, and history of applied anthropology, the instructor serves as a facilitator and mediator for students and the project client.

IV. Instructional goals and student outcomes:
A. The instructor will:
1. Explain the core concepts, historical developments, methods employed, and major results of applying anthropological theory and method to the understanding and amelioration of sociocultural problems or challenges in Alaska, the US, and worldwide.
2. Identify and discuss the major subfields in applied anthropology, and the kinds of employment available in each related to one's educational achievement and experience.

3. Explain the ethical principles required of applied and practicing anthropologists, proving illustrations of both appropriate and unethical activity in the field.
4. Serve as a project facilitator and a mediator between students the client.
5. Prior to the start of the semester, the instructor will identify a client (person, community group, or organization) in the Anchorage/Mat-Su area, and work with the client to identify the main research topic and people who will be involved in the project (i.e. interviewees).
6. Prior to the start of the semester, the instructor will obtain IRB and any other necessary approvals/licenses, as well as project funding (if needed).

B. The student will be able to:

1. Discuss the core concepts, historical developments, methods and results of applying anthropological theory and method to sociocultural problems.
2. Discuss the development, activities appropriate to, and notable results of applied anthropology.
3. Discuss the ethical principles adhered to in this field.
4. Gain experience and competency in types of methods commonly used in applied anthropology.
5. Gain experience in designing, carrying out, and analyzing anthropological research with an applied focus; and in the development and dissemination of research deliverables to a client.
6. Work effectively as a part of a team.
7. Work as project managers to assist the instructor with mentoring undergraduate student research and writing; and oversee particular aspects of project completion.

V. Assessment:

1. Graduate students will receive a final grade for the course (A-F). Graduate students will maintain research journals cataloguing their progress and accounting for individual contributions and activities related to the class research project. Graduate students will be assessed based on the quality, rigor, completion, and collegiality reflected in their journals, in-class activities, and the final database and project reports developed for delivery to the class client. The journal also provides the instructor with information about student participation and success outside of the classroom – thus highlighting contributions to the class project that may not be readily observable in the classroom or the final report to the client.
2. Graduate students will be assessed, in addition to the above, based on their performance as mentors to the undergraduates, as reflected in their own journal entries and the instructor's observations during class activities. Graduate students are expected to contribute to class research, analysis,

and writing at a higher level – and will work as project managers under the instructor to guide undergraduate student work.

VI. Topical course outline:

1. Introduction and overview; distinction between basic and applied anthropological research
2. History and kinds of applied anthropology, globally, in the US, and with a special emphasis on Alaska
3. Ethics in applied research and practice
4. Method and theory in applied anthropology:
    a. Ethnography, participant observation, key-informant interviewing, oral and life histories, qualitative analyses
    b. Focus groups, questionnaire surveys, quantitative analyses
5. Research design and process:
    a. Identifying core research problem and developing specific research questions to answer the problem
    b. Time management and troubleshooting
    c. Population sampling techniques
    d. Designing research instruments (surveys, interviews)
    e. Storing, organizing, coding, and analyzing data
    f. Writing research dissemination materials for clients and public audiences

VII. Suggested texts:

Beck & Maida. 2013. Toward Engaged Anthropology.

Ervin. 2004. Applied Anthropology: Tools and Perspectives for Contemporary Practice, 2nd edition.

Podolefsky, Brown, & Lacy, eds. 2013. Applying Cultural Anthropology: An Introductory Reader, 9th edition.

Benard. 2006. Research Methods in Anthropology, 4th edition.

VIII. Bibliography:

American Anthropological Association Ethical Guidelines. 1998. http://www.aaanet.org/committees/ethics/ethcode.html.

Baer, Singer & Susser. 2003. Medical Anthropology and the World System.

Denzin, Lincoln, & Smith. 2008. Handbook of Critical and Indigenous Methodologies.

Douglas, Mary. 1992. The Normative Debate and the Origins of Culture. In *Risk and Blame: Essays in Cultural Theory*. Pp. 125-148.

Feldman, Langdon & Natcher. 2005. Northern Engagement: Alaskan Society and Applied Cultural Anthropology, 1973-2003. *Alaska Journal of Anthropology* 3(1):121-155.

Hale, Charles R. 2006. Activist Research vs. Cultural Critique: Indigenous Land Rights and the Contradictions of Politically Engaged Anthropology. *Cultural Anthropology* 21(1):96-120.

Henry & Manoochehri. 2010. On Becoming an Applied Anthropologist: Collaboration and Clients in the Classroom. *Practicing Anthropology* 32(2):26-30.

Hill & Baba, eds. 2000. The Unity of Theory and Practice in Anthropology: Rebuilding a Fractured Synthesis. *NAPA Bulletin* No. 18.

Rylko-Bauer, Singer & Willingen. 2006. Reclaiming Applied Anthropology: Its Past, Present, and Future. *American Anthropologist* 108(1):178-190.

Sillitoe, Paul. 1998. The Development of Indigenous Knowledge: A New Applied Anthropology. *Current Anthropology* 39(2):223-252.

US Department of Health, Education, and Wealth. 2010. The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research. http://ohsr.od.nih.gov/guidelines/belmont.html.

Wheeler & Thorton. 2005. Subsistence Research in Alaska: A Thirty Year Retrospective. *Alaska Journal of Anthropology* 3(91)69-103.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A435	NA	3	(3+0)

6. Complete Course Title
Northwest Coast Cultures

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☐ Change *or* ☒ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status choose one # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2014 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with

Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anthropology BA/BS	1/0/31/2013	Paul White
2. Anthropology MA	10/31/2013	Paul White
3. Alaska Native Studies Minor	10/31/2013	Maria Williams

Initiator Name (typed): Steve J. Langdon Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/3013

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Indigenous peoples and cultures of the Northwest Coast including prehistory, regional variations, key institutions (potlatch, art, slavery, spirituality, warfare), culture history, ethnohistoric change and contemporary issues such as cultural revitalization, land and resource rights and self-determination.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Program consolidation and revision, involving streamlining of course offerings for students.

Initiator (faculty only) Date
Steve J. Langdon
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A454	ANTH A354	3	(3+0)

6. Complete Course Title
Culture and Ecology

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☒ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☒ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Spring/2014 To: Fall1/9999

12. ☐ Cross Listed with

☒ Stacked with ANTH A654 _____ Cross-Listed Coordination
Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Integrative Capstone (Tier 3 GER), p. 87 2012-13 catalog	10/31/2013	Faculty List Serv
2. Environment and Society BA/BS, p. 106, 2012-13 catalog	10/31/2013	Dorn Van Dommelen
3.		

Initiator Name (typed): Steve J. Langdon Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/2013

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☒ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Anthropological approaches to the relationships between cultural and ecological systems. Culture as an adaptive system and the role of various cultural subsystems in different adaptations. Application of ecological concepts to human societies; impacts of environmental change on human societies, and impacts of human societies on environments; ethnoecology and traditional ecological knowledge of indigenous communities; values of nature among Western and non-Western societies; and political ecology in relation to the juxtaposition of indigenous peoples within contemporary nation-states.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
ANTH A202 minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Other Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This capstone course has been taught at the advanced undergraduate level for the past several years, and its movement to the 400 level reflects its content level as a capstone course in Anthropology.

Initiator (faculty only) Date Steve J. Langdon Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Date of Initiation Date: Fall 2013

II. Course Information

A. College:	College of Arts and Sciences
B. Course Prefix	ANTH
C. Course Number	A454
D. Number of Credits	3
E. Contact Hours	3+0
F. Course Title:	Culture and Ecology
G. Grading Basis:	A-F
H. Implementation Date	Fall 2014
I. Course Description:	Anthropological approaches to the relationships between cultural and ecological systems. Culture as an adaptive system and the role of various cultural subsystems in different adaptations. Application of ecological concepts to human societies; impacts of environmental change on human societies, and impacts of human societies on environments; ethnoecology and traditional ecological knowledge of indigenous communities; values of nature among Western and non-Western societies; and political ecology in relation to the juxtaposition of indigenous peoples within contemporary nation-states.
J. Status of Course Relative to a Degree or Certificate Program:	GER Integrative Capstone BA Anthropology capstone BS Anthropology capstone BS Environment and Society, Society and Environment emphasis Minor, Environmental Studies, List B BS Natural Sciences, Environmental Sciences option, Social Sciences list
K. Course Fees:	No
L. Course Prerequisite:	ANTH A202, minimum grade of C
M. Stacking	ANTH A654

III. Course Activities

In a lecture and discussion format, information will be presented concerning the diversity of ways in which human societies adapt and have adapted to their natural environments and have transformed those environments, from prehistory to the present, in global perspective.

IV. Course Evaluation

Evaluation procedures are at the discretion of the instructor and will be discussed at the first class meeting of the semester. Students will be evaluated on all class content and assigned readings. Evaluation vehicles will include (but are not limited to) examinations, student journals/reflections, student questions on readings, and class discussions.

A. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Apply fundamental ecological concepts to human societies	Examinations, student journals/reflections, daily questions, and/or class discussion
2. Analyze environmental changes during human prehistory and history, and their impacts on human societies	Examinations, student journals/reflections, daily questions, and/or class discussion
3. Analyze long-term impacts of human societies on their environments, from prehistory to the present	Examinations, student journals/reflections, daily questions, and/or class discussion
4. Interpret different approaches of societies to nature, and the differences and similarities between indigenous environmental knowledge and that of contemporary Western societies	Examinations, student journals/reflections, daily questions, and/or class discussion

V. Course Justifications:

A. Justification of course level: This course contains advanced content; it is a synthetic course requiring specialized knowledge

B. Justification for capstone status: This course integrates general knowledge about human cultural adaptations to produce a synthetic but detailed understanding of the long-term history of human-environmental relations, including both environmental impacts on human societies and vice versa, as well as an understanding of distinctions between Western and non-Western approaches to ecological knowledge and values of nature, and a consideration of the ecological circumstances of indigenous peoples embedded within contemporary nation-states.

C. Justification for stacking: Presence of graduate students in the course will enhance the course experience; graduate students will serve as mentors

VI. Instructional Goals and Defined Outcomes

A. Instructional Goals. The Instructor will:

1. Present fundamental ecological concepts and their relationship to human societies

2. Discuss human adaptations from a variety of cultural perspectives

3. Describe the impacts of environmental changes on human societies, and of human societies on their environments

4. Present Western and Non-western (indigenous) perspectives on ecological knowledge

B. Defined Student Learning Outcomes. The Student will be able to:

1. Apply fundamental ecological concepts to human societies

2. Analyze environmental changes during human prehistory and history, and their impacts on human societies

3. Analyze long-term impacts of human societies on their environments, from prehistory to the present

4. Interpret different approaches of societies to nature, and the differences and similarities between indigenous environmental knowledge and that of contemporary Western societies

C. Student assessment: based on examinations, student journals/reflections, daily questions, and class discussion

VII. Topical Outline:

1. History of Human Ecological Thought

2. Application of Ecological Concepts to Human Societies: Ecosystems and Communities; Species and Populations; Niches and Habitats; Ecotones and Boundaries; Limiting Factors

3. Global Environmental Change and Human Societies

4. Concepts of Adaptation, Resilience, and Sustainability as Applied to Human Societies

5. Biomes and Energetics

6. Human Bioenergetics; human food chains and food webs in ecological perspective; energy flow in human populations; energy and cultural evolution

7. Modeling Human Resource Utilization: bioeconomic optimization models; efficiency and risk in Human Adaptation; environment and technology; human subsistence patterns in spatiotemporal perspective

8. Ethnoecology, ethnoscience, and ethnotaxonomy

9. Traditional Ecological Knowledge (TEK); cognitive models and decision-making processes of indigenous communities

10. Gender and Ecology

11. Human Biodemography: Human Population Dynamics, Population Growth, and Population Regulation

12. Nutrient Cycles and Human Populations; Adaptation and Malnutrition

13. Human Impact on Environments: Hunter-gatherers, Farmers, Urban and Industrial Societies

14. Cooperation and Competition for Resources; Ecology of Territoriality and Warfare

15. Human Resource Management Strategies: Notions of the Commons; Resource Redistribution, Reciprocity, Exchange, and Trade; Storage and Conservation of Resources

16. Concepts of Resilience and Sustainability

17. Valuing Nature - Spiritual and Ritual Ecology

18. Political Ecology of Economic "Development" and Globalization

19. Political Ecology and the Sustainability of Indigenous Communities in Contemporary Nation-states

20. Humans and Climate Change

21. Environmental Ethics and the Future of Human Ecology

VIII. Suggested Textbooks:

Dove, M., & Carpenter, C. (2008). *Environmental anthropology: A historical reader.* Malden, MA: Blackwell Pub.

Haenn, N., & Wilk, R. R. (eds.) (2006). *The environment in anthropology: A reader in ecology, culture, and sustainable living*. New York: New York University Press.

Kormondy, Edward J., and Brown, Daniel E. (1998). *Fundamentals of Human Ecology*. Upper Saddle River, NJ: Prentice Hall.

Moran, E. F. (2010). *Environmental social science: Human-environment interactions and sustainability*. Wiley-Blackwell.

Moran, E. F. (2008). *Human adaptability: An introduction to ecological anthropology*, 3rd ed. Westview Press.

Sutton, M. Q., & Anderson, E. N. (2010). *Introduction to cultural ecology*, 2nd ed. Walnut Creek, CA: AltaMira Press.

Townsend, P.K. (2009). *Environmental anthropology: From pigs to policies*, 2nd ed. Waveland Press.

IX. Bibliography:

Argyrou, V. (2005). *The logic of environmentalism: Anthropology, ecology, and postcoloniality*. New York: Berghahn Books.

Balée, W. L. (1998). *Advances in historical ecology*. New York: Columbia University Press.

Bates, D. G., & Lees, S. H. (1996). *Case studies in human ecology*. New York: Plenum Press.

Begon, M., Townsend, C. R., & Harper, J. L. (2006). *Ecology: From individuals to ecosystems* (4th ed.). Malden, MA: Blackwell Pub.

Bhasin, V., & Susanne, C. (2010). *Anthropology today: Trends and scope of human ecology*. Delhi: Kamla-Raj Enterprises.

Biersack, A., & Greenberg, J. B. (2006). *Reimagining political ecology*. Durham: Duke University Press.

Cashdan, Elizabeth (1992). Spatial organization and habitat use. In *Evolutionary Ecology and Human Behavior*, ed. E. A. Smith and B. Winterhalder, pp. 237-266. Hawthorne, NY: Aldine de Gruyter.

Chacon, R. J., & Mendoza, R. G. (2012). *The ethics of anthropology and Amerindian research: Reporting on environmental degradation and warfare*. New York: Springer.

Crate, S. A., & Nuttall, M. (2009). *Anthropology and climate change: From encounters to actions*. Walnut Creek, CA: Left Coast Press.

Crumley, C. L. (2001). *New directions in anthropology and environment: Intersections*. Walnut Creek, CA: AltaMira Press.

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Kopnina, H., & Shoreman-Ouimet, E. (2011). *Environmental anthropology: Cross-disciplinary investigations*. New York: Routledge.

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McElroy, A., & Townsend, P. K. (2009). *Medical anthropology in ecological perspective* (5th ed.). Boulder, CO: Westview Press.

Milton, K. (1996). *Environmentalism and cultural theory: Exploring the role of anthropology in environmental discourse*. New York: Routledge.

Molnar, S., & Molnar, I. M. (2000). *Environmental change and human survival: Some dimensions of human ecology*. Upper Saddle River, NJ: Prentice Hall.

Moran, E. F. (2006). *People and nature: An introduction to human ecological relations*. Malden, MA: Blackwell Pub.

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Platten, S., & Henfrey, T. (2009). The cultural keystone concept: Insights from ecological anthropology. *Human Ecology: An Interdisciplinary Journal, 37*(4), 491-500. doi: 10.1007/s10745-009-9237-2

Rappaport, R. A. (1984). *Pigs for the ancestors: Ritual in the ecology of a New Guinea people* (A new enl. ed.). New Haven: Yale University Press.

Rappaport, R. A., Messer, E., & Lambek, M. (2001). *Ecology and the sacred: Engaging the anthropology of Roy A. Rappaport*. Ann Arbor: University of Michigan Press.

Ray, R. (2005). *Adapting to changing environment: Studies in anthropology*. Kolkata: University of Calcutta.

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Scoones, I. (1999). New ecology and the social sciences: What prospects for a fruitful engagement? *Annual Review of Anthropology, 28*(1), 479.

Sillitoe, P. (2007). *Local science vs. global science: Approaches to indigenous knowledge in international development*. New York: Berghahn Books.

Smith, E. A. and Wishnie, M. (2000). Conservation and subsistence in small-scale societies. *Annual Review of Anthropology, 29, 493-524.*

Walters, B. B. (2008). *Against the grain: The Vayda tradition in human ecology and ecological anthropology*. Lanham, MD: Altamira Press.

Wenzel, G. W. (2004). From TEK to IQ: Inuit Qaujimajatuqangit and Inuit cultural ecology. *Arctic Anthropology, 41*(2), 238-250.

White, R. D. (1985). American environmental history: The development of a new historical field. *Pacific Historical Review, 54, 297-335.*

White, R. D. (2004). *Controversies in environmental sociology*. New York: Cambridge University Press.

Winterhalder, B. (2002). Behavioral and other human ecologies: Critique, response and progress through criticism. *Journal of Ecological Anthropology, 6, 4-23.*

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A654	N/A	3	(3+0)

6. Complete Course Title
Advanced Culture and Ecology

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Spring/2014 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with ANTH A454

Signature Cross-Listed Coordination

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anthropology MA	10/20/2013	Paul White
2.		
3.		

Initiator Name (typed): Steve J. Langdon Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/2013

14. General Education Requirement *Mark appropriate box:*
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Advanced anthropological approaches to the relationships between cultural and ecological systems. Culture as an adaptive system and the role of various cultural subsystems in different adaptations. Application of ecological concepts to human societies; impacts of environmental change on human societies, and impacts of human societies on environments; ethnoecology and traditional ecological knowledge of indigenous communities; values of nature among Western and non-Western societies; and political ecology in relation to the juxtaposition of indigenous peoples within contemporary nation-states. Research paper required.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
Anth 202 completed with minimum C grade

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Other Restriction(s)
☐ College ☐ Major ☐ Class ☒ Level

16d. Registration Restriction(s) *(non-codable)*
Graduate standing

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Graduate students have need for a course in ecological anthropology that reflects both Western and non-Western (indigenous) approaches to human-environment interaction.

Initiator (faculty only) Date Steve J. Langdon Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Date of Initiation Date: Fall 2013

II. Course Information

A.	College:	College of Arts and Sciences
B.	Course Prefix	ANTH
C.	Course Number	A654
D.	Number of Credits	3
E.	Contact Hours	3+0
F.	Course Title:	Advanced Studies in Culture and Ecology
G.	Grading Basis:	A-F
H.	Implementation Date	Fall 2014
I.	Course Description:	Advanced anthropological approaches to the relationships between cultural and ecological systems. Culture as an adaptive system and the role of various cultural subsystems in different adaptations. Application of ecological concepts to human societies; impacts of environmental change on human societies, and impacts of human societies on environments; ethnoecology and traditional ecological knowledge of indigenous communities; values of nature among Western and non-Western societies; and political ecology in relation to the juxtaposition of indigenous peoples within contemporary nation-states.
J.	Status of Course Relative to a Degree or Certificate Program:	Elective in the MA Anthropology
K.	Course Fees:	No
L.	Registration Restrictions:	Graduate Standing
M.	Stacking	ANTH A454

III. Course Activities

In a lecture and discussion format, information will be presented concerning the diversity of ways in which human societies adapt and have adapted to their natural environments and have transformed those environments, from prehistory to the present, in global perspective.

IV. Course Evaluation

Evaluation procedures are at the discretion of the instructor and will be discussed at the first class meeting of the semester. Students will be evaluated on all class content and assigned readings. Evaluation vehicles will include (but are not limited to) examinations, research papers, student journals/reflections, student questions on readings, and class discussions. The requirement for research papers differentiates the undergraduate (A454) and graduate (A654) versions of this course.

V. Course Justifications:

A. Justification for new course: this course will provide graduate students with information on human-environmental relationships, including key concepts of resilience and sustainability, as well as traditional ecological knowledge and indigenous environmental perspectives, that are critical to graduate education in anthropology

B. Justification for stacking: achieves goal of providing information on human-environmental relationships to graduate students in an efficient delivery vehicle; allows graduate students to mentor undergraduates; will be differentiated by requirement for research papers

VI. Instructional Goals and Defined Outcomes

A. Instructional Goals. The Instructor will:

1. Present fundamental ecological concepts and their relationship to human societies

2. Discuss human adaptations from a variety of cultural perspectives

3. Describe the impacts of environmental changes on human societies, and of human societies on their environments

4. Present Western and Non-western (indigenous) perspectives on ecological knowledge

B. Defined Outcomes. The Student will be able to:

1. Apply fundamental ecological concepts to human societies

2. Analyze environmental changes during human prehistory and history, and their impacts on human societies

3. Analyze long-term impacts of human societies on their environments, from prehistory to the present

4. Articulate in detail a specific aspect of human-environmental relationships resulting from individual research

C. Student assessment: based on examinations, research papers, student journals/reflections, daily questions, and class discussion

VII. Topical Outline:

1. History of Human Ecological Thought

2. Application of Ecological Concepts to Human Societies: Ecosystems and Communities; Species and Populations; Niches and Habitats; Ecotones and Boundaries; Limiting Factors

3. Global Environmental Change and Human Societies

4. Concepts of Adaptation, Resilience, and Sustainability as Applied to Human Societies

5. Biomes and Energetics

6. Human Bioenergetics; human food chains and food webs in ecological perspective; energy flow in human populations; energy and cultural evolution

7. Modeling Human Resource Utilization: bioeconomic optimization models; efficiency and risk in Human Adaptation; environment and technology; human subsistence patterns in spatiotemporal perspective

8. Ethnoecology, ethnoscience, and ethnotaxonomy

9. Traditional Ecological Knowledge (TEK); cognitive models and decision-making processes of indigenous communities

10. Gender and Ecology

11. Human Biodemography: Human Population Dynamics, Population Growth, and Population Regulation

12. Nutrient Cycles and Human Populations; Adaptation and Malnutrition

13. Human Impact on Environments: Hunter-gatherers, Farmers, Urban and Industrial Societies

14. Cooperation and Competition for Resources; Ecology of Territoriality and Warfare

15. Human Resource Management Strategies: Notions of the Commons; Resource Redistribution, Reciprocity, Exchange, and Trade; Storage and Conservation of Resources

16. Concepts of Resilience and Sustainability

17. Valuing Nature - Spiritual and Ritual Ecology

18. Political Ecology of Economic “Development” and Globalization

19. Political Ecology and the Sustainability of Indigenous Communities in Contemporary Nation-states

20. Humans and Climate Change

21. Environmental Ethics and the Future of Human Ecology

Suggested Textbooks:

Fundamentals of Human Ecology, by Edward J. Kormondy and Daniel E. Brown (Prentice Hall; Upper Saddle River, NJ; 1998)

The environment in anthropology: A reader in ecology, culture, and sustainable living. Edited by Haenn, N., & Wilk, R. R. New York University Press: 2006.

Environmental anthropology: From pigs to policies (2nd ed.). ByTownsend, P. K. Waveland Press: 2009.

Human adaptability: An introduction to ecological anthropology (3rd ed.). By Moran, E. F. Westview Press: 2008.

Introduction to cultural ecology (3rd ed.). By Sutton, M. Q., & Anderson, E. N. AltaMira Press: 2013.

Environmental anthropology: A historical reader. By Dove, M., & Carpenter, C. Malden, MA: Blackwell Pub.: 2008

VIII. Bibliography:

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Balée, W. L. (1998). *Advances in historical ecology*. New York: Columbia University Press.

Begon, M., Townsend, C. R., & Harper, J. L. (2006). *Ecology: From individuals to ecosystems* (4th ed.). Malden, MA: Blackwell Pub.

Bhasin, V., & Susanne, C. (2010). *Anthropology today: Trends and scope of human ecology*. Delhi: Kamla-Raj Enterprises.

Biersack, A., & Greenberg, J. B. (2006). *Reimagining political ecology*. Durham: Duke University Press.

Chacon, R. J., & Mendoza, R. G. (2012). *The ethics of anthropology and Amerindian research: Reporting on environmental degradation and warfare*. New York: Springer.

Crate, S. A., & Nuttall, M. (2009). *Anthropology and climate change: From encounters to actions*. Walnut Creek, CA: Left Coast Press.

Crumley, C. L. (1994). *Historical ecology: Cultural knowledge and changing landscapes* (1st ed.). Santa Fe, NM: School of American Research Press.

Crumley, C. L. (2001). *New directions in anthropology and environment: Intersections*. Walnut Creek, CA: AltaMira Press.

Ellen, R. F. (2007). *Modern crises and traditional strategies: Local ecological knowledge in island Southeast Asia*. New York: Berghahn Books.

Ellen, R. F., Parkes, P., & Bicker, A. (2000). *Indigenous environmental knowledge and its transformations: Critical anthropological perspectives*. Amsterdam: Harwood Academic.

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Hastrup, K., & Skrydstrup, M. (2013). *The social life of climate change models: Anticipating nature* (1st ed.). New York: Routledge.

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Kelly, R. L. (2013). *The lifeways of hunter-gatherers: The foraging spectrum* (2nd ed.). Cambridge: Cambridge University Press.

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Kopnina, H., & Shoreman-Ouimet, E. (2011). *Environmental anthropology: Cross-disciplinary investigations*. New York: Routledge.

McElroy, A., & Townsend, P. K. (2009). *Medical anthropology in ecological perspective* (5th ed.). Boulder, CO: Westview Press.

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Minnegal, M. (1996). A necessary unity: The articulation of ecological and social explanations of behavior. *Journal of the Royal Anthropological Institute, 2, 141-158.*

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Netting, R. M. (1981). *Balancing on an Alp: Ecological change and continuity in a Swiss mountain community*. New York: Cambridge University Press.

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Oldfield, M. L., & Alcorn, J. B. (1991). *Biodiversity: Culture, conservation, and ecodevelopment*. Boulder: Westview Press.

Orlove, B. S. (1980). Ecological anthropology. *Annual Review of Anthropology, 9*, 235-273.

Platten, S., & Henfrey, T. (2009). The cultural keystone concept: Insights from ecological anthropology. *Human Ecology: An Interdisciplinary Journal, 37*(4), 491-500. doi: 10.1007/s10745-009-9237-2

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Ray, R. (2005). *Adapting to changing environment: Studies in anthropology*. Kolkata: University of Calcutta.

Rival, L. (2006). Amazonian historical ecologies. *Journal of the Royal Anthropological Institute, 12*, 79-94. doi: 10.1111/j.1467-9655.2006.00274.x

Scoones, I. (1999). New ecology and the social sciences: What prospects for a fruitful engagement? *Annual Review of Anthropology, 28*(1), 479.

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Smith, E. A. (1984). Approaches to Inuit socioecology. *Etudes/Inuit/Studies, 8, 65-87.*

Smith, E. A. (1991). *Inujjuamiut foraging strategies: Evolutionary ecology of an arctic hunting economy*. New York: Aldine de Gruyter.

Smith, E. A., & Winterhalder, B. (1992). *Evolutionary ecology and human behavior*. New York: Aldine de Gruyter.

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Sponsel, L. E. (1995). *Indigenous peoples and the future of Amazonia: An ecological anthropology of an endangered world*. Tucson: University of Arizona Press.

Vayda, A. P., & McCay, B. J. (1975). New directions in ecology and ecological anthropology (Vol. 4, pp. 293-306): Annual Reviews Inc.

Walters, B. B. (2008). *Against the grain: The Vayda tradition in human ecology and ecological anthropology*. Lanham, MD: Altamira Press.

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White, R. D. (2004). *Controversies in environmental sociology*. New York: Cambridge University Press.

Winterhalder, B. (1980). Environmental analysis in human evolution and adaptation research. *Human Ecology, 8, 135-170.*

Winterhalder, Bruce (1993). Work, resources, and population in foraging societies. *Man, 28, 321-340.*

Winterhalder, B. (2002). Behavioral and other human ecologies: Critique, response and progress through criticism. *Journal of Ecological Anthropology, 6, 4-23.*

Winterhalder, B., & Smith, E. A. (1981). *Hunter-gatherer foraging strategies: Ethnographic and archeological analyses*. Chicago: University of Chicago Press.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A465	None	3	(3+0)

6. Complete Course Title
Culture and Globalization

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits 3

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2014 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with ANTH A665

Signature Cross-Listed Coordination

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anthropology BA/BS	n/a	Steve Langdon
2. International Studies	02-12-13	Dorn Vandommelen
3.		

Initiator Name (typed): Marie Lowe Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 04-02-13
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04-02-13

14. General Education Requirement
Mark appropriate box:

- ☐ Oral Communication
- ☐ Written Communication
- ☐ Quantitative Skills
- ☐ Humanities
- ☐ Fine Arts
- ☐ Social Sciences
- ☐ Natural Sciences
- ☒ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Exploration of the relationship between culture and globalization through an examination of global capitalism and ethnographic experiences in the workplace, in the context of transnational migration and diasporas, and through the influence of new information technologies and media on values, beliefs, and practices.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
ANTH A101 or ANTH A202 or ANTH A250 completed with a minimum grade of C.

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Other Restriction(s)
☐ College ☐ Major ☐ Class ☒ Level

16d. Registration Restriction(s) *(non-codable)*
Junior Standing

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The class has been taught three times as a special topics course. A permanent upper division anthropology course is needed to expose students to contemporary ethnographic studies about the relationship between globalization and sociocultural change. It would fill an ethnography course requirement for department majors and it is also proposed as a capstone option for ANTH and IS majors.

		☐ Approved ☐ Disapproved	
Initiator (faculty only) Dr. Marie E. Lowe Initiator (TYPE NAME)	Date	Dean/Director of School/College	Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: October 2013

II. Course Information

A.	College:	College of Arts and Sciences
B.	Course Title:	Culture and Globalization
C.	Course Subject/Number:	ANTH A465
D.	Credit Hours:	3.0 Credits
E.	Contact Time:	3+0 Contact Time
F.	Grading Information:	A-F

G. Course Description:

Exploration of the relationship between culture and globalization through an examination of global capitalism and ethnographic experiences in the workplace, in the context of transnational migration and diasporas, and through the influence of new information technologies and media on values, beliefs, and practices.

Special Note: Graduate section may be taken if undergraduate section taken.
May be stacked with ANTH A665

H. Status of course relative to degree or certificate program:

Positioned as a capstone option and specified in the BA degree in International Studies as a capstone option. An International Studies program revision is currently in process as of Fall Semester 2013.

I.	Lab Fees:	No
J.	Coordination:	International Studies
K.	Course Prerequisites:	ANTH A101 or ANTH A202 or ANTH A250
L.	Registration Restrictions:	Junior Standing

III. Course Activities

Discussions, readings, videos, research paper formulation.

IV. Evaluation

This is a discussion-based course utilizing theoretical and ethnographic readings with a final term paper project. The grading structure is as follows:

A. Attendance (10%), Preparedness/Participation (10%)	20%
B. Assignments (10@2%)	20%
C. Mid-Term Paper	20%
D. Final Term Paper	40%
	100%

A. Attendance, Preparedness/Participation (20%)

For each reading assignment, students will be given questions to use as a discussion guide. They will be expected to take notes on the discussion guide in addition to participating in the class discussion.

B. Assignments (20%)

The students will be required to formulate a research topic and paper related to the course material. The topic will be chosen early in the semester after some preliminary theoretical readings followed by ethnographic examples of the course's main subject material. Subsequent assignments will encompass the construction of a literature review and bibliography (which will include a guest lecture by the anthropology department's research librarian from the UAA Consortium Library), a paper outline, a paper expansion plan (see below), and short presentations on the term paper topic.

C. Mid-Term Paper (20%)

At mid-term, the students will write a 5-page version of their term papers which will include the full bibliography.

D. Final Research Term Paper (40%)

For the rest of the semester, students will work on expanding that 5-page paper into a respectable 20-page term paper. The instructor will walk the students through the research paper process step by step.

V. Course Level Justification

This course will build on and refine student understanding of historical processes, cultural diversity, and human adaptation to change introduced in lower division anthropology courses. A permanent upper division anthropology course is needed to expose students to contemporary ethnographic studies that investigate and examine the relationship between globalization processes and sociocultural change. For department majors, this course would fill an ethnography course requirement for subject material outside the domain of Alaska/Arctic anthropology. For students within the anthropology department and outside the anthropology department (such as INTL Studies), this course will provide them with a cross-cultural perspective on contemporary economic, political, and social issues in our increasingly interconnected world. All students will be required to produce a 20 page formal research paper on a topic of their choosing related to the course material. The instructor will mentor students on this assignment in a step-by-step and semester-long reflection and writing process. The goal is to help students develop their writing skills to be ready for graduate school or post-graduate professional positions.

VI. Course Outline

A. Introductions

1. What is globalization? What is culture? How has anthropology changed within the context of a globalized world?
2. Overview of course subtopics: Development, Mobility, Media.
3. Globalization as Neoliberalism, Cosmopolitanism and Consumption, the Rise of Fundamentalisms, Nationalisms, and Identity Politics.
4. Literature Review Workshop, Consortium Library
5. ***Term Paper Topic Selection Decision***

B. Development, Devolution, Discourse

1. Development Theory
2. Videos: "Life and Debt" (IMF and Impact of Structural Adjustment Policies); David Graeber on the History of Debt.
3. Ethnographic reading on Capitalism and the Modern Workplace.
4. ***Assignment 1: Paper Topic Description***
5. ***Assignment 2: Thesis Statement***
6. ***Assignment 3: Paper Sections and Title***
7. ***Assignment 4: Paper Bibliography Draft Due***

C. Mobility: Migration, Transnationalism, Diasporas

1. Migration Theory.
2. Ethnographic Reading on Migration.
3. ***Assignment 5: Full Paper Outline***
4. ***Assignment 6: Final Draft Paper Bibliography***
5. ***Mid-Term Paper***
6. ***Assignment 7: Expansion Plan for Paper Due***
7. ***Assignment 8 & 9: Rough Draft of Paper Due***

D. Media, Technology, and Identity

1. Segue from Mobility Component: Identity Theory.
2. Media and New Technology Theory.
3. Ethnographic reading on Media and Identity: Media and Hegemony; Media and Resistance.
4. Videos "Nanook of the North" and excerpts from "The Fast Runner."
5. ***Assignment 10: Mini Paper Presentations***

E. Conclusions

1. Wrap-up: Cultural Homogenization vs. Cultural Adaptation.
2. ***Final Term Paper***

VII. Instructional Goals and Defined Outcomes

Instructional Goal	Student Outcomes	Assessment Procedures
Student engagement with course material through spirited and intellectual discussion of course readings; emphasis on rhetorical argument skills.	Rhetorical argument Socratic reasoning skills.	Class attendance, preparedness, participation.
Student familiarity with cultural dimensions of globalization and modernity.	Critical thinking and informed understandings and positions on the history and effects of large drivers of sociocultural change like globalization, what culture is, and the logic of cultural relativism.	Class attendance, preparedness, participation.
Help students learn the research process.	Ability to construct a literature review, formulate a research question and argument, locate references, build a bibliography, and write by way of drafts.	Ten assignments devoted to a step-by-step process for constructing a formal research paper.
Help students produce a formal piece of academic writing.	Academic writing skills.	Term paper.
Prepare students for graduate school or professional positions.	Argumentation, speaking, and writing skills.	Success in completion of the above assignments.

VIII. Suggested Texts

A. Theoretical Foundations:

Lewellen, Ted C. 2002. The Anthropology of Globalization: Cultural Anthropology Enters the 21st Century. Westport, CT: Bergin and Garvey.

B. Ethnographies/Ethnographic Writings (Instructor will update periodically and **choose three main works** per semester):

Bestor, Theodore C. Tsukiji: The Fish Market at the Center of the World. Berkeley: University of California Press.

Chavez, Leo. 1998. Shadowed Lives: Undocumented Immigrants in American Society. Wadsworth.

Chernoff, John. Hustling is not Stealing: Stories of an African Bar Girl. Chicago: University of Chicago Press.

Farrar, James. 2002. Opening Up: Youth, Sex, Culture and Market Reform in Shanghai. Chicago: University of Chicago Press.

Freeman, Carla. High Tech and High Heels in the Global Economy: Women, Work and Pink Collar Identities in the Caribbean Durham: Duke University Press.

Ginsburg, Faye. 2002. "Screen Memories: Resignifying the Traditional in Indigenous Media." In Media Worlds, Ginsburg, Abu-Lughod, and Larkin, eds. Berkeley: University of California Press. Pp. 39-57.

Holtzman, Jon D. 2008. Nuer Journeys, Nuer Lives: Sudanese Refugees in Minnesota. Boston: Pearson.

Hirsch, Jennifer. 2003. A Courtship After Marriage: Sexuality and Love in Mexican Transnational Families. Berkeley: University of California Press.

LaBennett, Oneka. 2011. She's Mad Real: Popular Culture and West Indian Girls in Brooklyn. New York: NYU Press.

Mazzarella, William. 2003. Shoveling Smoke: Advertising and Globalization in Contemporary India. Durham: Duke University Press.

Ntarangwi, Mwenda. 2009. East African Hip Hop: Youth Culture and Globalization. Champaign, IL: University of Illinois Press.

Mills, Mary Beth. 1999. Thai Women in the Global Labor Force. New Brunswick: Rutgers University Press.

Ngai, Pun. 2005. Made in China: Women Factory Workers in a Global Workplace. Durham: Duke University Press.

Pai, Hsiao-Hung. 2012. Scattered Sand: The Story of China's Rural Migrants. Verso: London.

Rudnyckyj, Daromir. 2010. Spiritual Economies: Islam, Globalization, and the Afterlife of Development. Ithaca: Cornell University Press.

Said, Edward. 1997. Covering Islam: How the Media and the Experts Determine How We See the Rest of the World. New York:Vintage.

Walsh, Andrew. 2012. Made in Madagascar: Sapphires, Ecotourism, and the Global Bazaar. Toronto: University of Toronto Press.

Xiang, Biao. 2007. Global "Body Shopping": An Indian Labor System in the Information Technology Industry. Princeton: Princeton University Press.

C. Videos:

Black, Stephanie. 2001. Life and Debt.

Flaherty, Robert J. 1922. Nanook of the North.

Kunuk, Zacharias. 2002. The Fast Runner. (Excerpts in class; full-length on reserve)

IX. Bibliography and Resources

Cole, Jennifer and Deborah Durham 2006 Generations And Globalization: Youth, Age, and Family in the New World Economy. Indiana University Press.

Giddens, Anthony 2003 Runaway World: How Globalization is Reshaping Our Lives. Routledge.

Barber, Benjamin 1995 Introduction to *Jihad vs. McWorld*. Times Books.

Bell, Wendell 2004 "Humanity's Common Future: Seeking a Positive Future". *The Futurist*.

Bucholtz, Mary 2002 "Youth and Cultural Practice". *Annual Review of Anthropology*, 31:525-52.

Friedman, Thomas 2005 "The World is Flat". New York: Farrar, Strauss, and Giroux.

Juergensmeyer, Mark 2004 "Holy Orders: Religious Opposition to Modern States". Harvard International Review, Winter 2004: 34-38.

Knudson, Tom 2004 "Shifting the pain: World's resources feed California's growing appetite". *The Sacramento Bee*, April 27, 2003.

Miller, Mark Crispin 2002 "What's Wrong With This Picture". The Nation, January 7-14:333-8536.

Sklair, Leslie 2004 "Sociology of the Global System". In *The Globalization Reader*, Lechner and Boli, eds. Malden, MA: Blackwell Publishing. Pp. 70-76.

Ramdas, Kavita 2006 "Feminists and Fundamentalists". *Current History*, 99-104.

Rivoli, Pietra. 2009. The Travels of a T-Shirt in the Global Economy. Hoboken, NJ: Wiley.

Ruthven, Malise. 2007. Fundamentalism: A Very Short Introduction. New York: Oxford University Press.

Schiller, Nina Glick and Thomas Faist. 2010. Migration, Development, and Transnationalization. New York: Berghahn Books.

Snyder, David Pearce 2004 "Five Meta-Trends Changing the World". *The Futurist*, July/August 2004.

Stiglitz, Joseph E. 2002 "Globalism's Discontents". *The American Prospect*, 13(1):1-14.

Vise, David A. 2005 "What Lurks in Its Soul?" *The Washington Post*, November 13, 2005.

Wilson, Chris 2006 "The Century Ahead". *Daedalus*, Winter 2006.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A665	None	3	(3+0)

6. Complete Course Title
Advanced Culture and Globalization

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2014 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with ANTH A465

Signature Cross-Listed Coordination

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anthropology MA	04/02/2013	Paul White
2.		
3.		

Initiator Name (typed): Marie Lowe Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 04-02-13
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 04-02-13

14. General Education Requirement
Mark appropriate box:

- ☐ Oral Communication
- ☐ Written Communication
- ☐ Quantitative Skills
- ☐ Humanities
- ☐ Fine Arts
- ☐ Social Sciences
- ☐ Natural Sciences
- ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Advanced exploration of the relationship between culture and globalization through an examination of global capitalism and ethnographic experiences in the workplace, in the context of transnational migration and diasporas, and through the influence of new information technologies and media on values, beliefs, and practices.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
Anth 202 completed with minimum of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Other Restriction(s)
☐ College ☐ Major ☐ Class ☒ Level

16d. Registration Restriction(s) *(non-codable)*
MA Program Acceptance

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This class has been taught three times as a special topics undergraduate course. A permanent, graduate anthropology course is needed to expose students to contemporary ethnographic studies on the relationship between globalization and sociocultural change. This course will provide graduate students with an ethnography course on subject material outside the domain of Alaska/Arctic anthropology.

		☐ Approved	
Initiator (faculty only)	Date	☐ Disapproved	Dean/Director of School/College — Date
Marie E. Lowe Initiator (TYPE NAME)			
☐ Approved		☐ Approved	
☐ Disapproved	Department Chair — Date	☐ Disapproved	Undergraduate/Graduate Academic Board Chair — Date
☐ Approved		☐ Approved	
☐ Disapproved	College/School Curriculum Committee Chair — Date	☐ Disapproved	Provost or Designee — Date

UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date: March 2013

II. Course Information

A.	College:	College of Arts and Sciences
B.	Course Title:	Culture and Globalization
C.	Course Subject/Number:	ANTH A665
D.	Credit Hours:	3.0 Credits
E.	Contact Time:	3+0 Contact Time
F.	Grading Information:	A-F
G.	Course Description:	

The term, *globalization*, has economic, political, technological, environmental, and sociocultural implications. At a very basic conceptual level, the term describes transnational flows of products, people, and ideas. It is in this context the course situates the culture concept and its evolution in a changing world in conjunction with changes in the discipline and perspective of anthropology. The class will investigate the relationship between culture and globalization by examining global capitalism and ethnographic experiences in the workplace, in the context of transnational migration and diasporas, and through the influence of new information technologies and media on values, beliefs, and practices. Through individual research papers developed over the course of the semester, students will demonstrate both a theoretical and a real world understanding of how people are culturally affected by globalization and how globalization is in turn affected by culture.

May be stacked with ANTH A465

H. Status of course relative to degree or certificate program:

Applies to the MA in Anthropology.

I.	Lab Fees:	No
J.	Coordination:	None
K.	Course Prerequisites:	None
L.	Registration Restrictions:	Student must be enrolled in the UAA MA program

III. Course Activities

Discussions, readings, videos, research paper formulation.

IV. Evaluation

This is a discussion-based course utilizing theoretical and ethnographic readings with a final term paper project. The grading structure is as follows:

A.	Attendance (10%), Preparedness/Participation (10%)	20%
B.	Short Position Paper Delivered to Class	10%
C.	Writing Assignments (5@2%)	10%
D.	Mid-Term Paper	20%
E.	Final Term Paper	40%
		100%

A. Attendance, Preparedness/Participation (20%)

For each reading assignment, students will be given questions to use as a discussion guide. They will be expected to take notes on the discussion guide in addition to participating in the class discussion. Graduate students will be assigned three additional theoretical readings.

B. Assignments (20%)

Position Paper (10%): Each graduate student will be assigned a short position paper to present to the class on one of the three additional theory readings. The student must demonstrate the use of rhetorical argumentation in this paper and will read it to the class to stimulate discussion for that day.

Research Topic (10%): The students will be required to formulate a research topic and paper related to the course material. The topic will be chosen early in the semester after some preliminary theoretical readings followed by ethnographic examples of the course's main subject material. Subsequent assignments will encompass the construction of a literature review and bibliography (which will include a guest lecture by the anthropology department's research librarian from the UAA Consortium Library), a paper outline, a paper expansion plan (see below), and short presentations on the term paper topic.

C. Mid-Term Paper (20%)

At mid-term, the students will write a 5-page version of their term papers which will include the full bibliography.

D. Final Research Term Paper (40%)

For the rest of the semester, students will work on expanding that 5-page paper into a respectable 20-page term paper. The instructor will walk the students through the research paper process step by step.

V. Course Level Justification

This course will build on and refine student understanding of historical processes, cultural diversity, and human adaptation to change introduced in lower division anthropology courses. A permanent upper division anthropology course is needed to expose students to contemporary ethnographic studies that investigate and describe the relationship between globalization processes and sociocultural change. This course will provide graduate students with an ethnography course on subject material outside the domain of Alaska/Arctic anthropology. All students will be required to produce a 20 page formal research paper on a topic of their choosing related to the course material. The instructor will mentor students on this assignment in a step-by-step and semester-long reflection and writing process. The goal is to help students develop their writing skills to be ready for thesis projects and post-graduate professional positions.

VI. Course Outline

A. <u>Introductions</u>

1. What is globalization? What is culture? How has anthropology changed within the context of a globalized world?
2. Overview of course subtopics: Development, Mobility, Media.
3. Globalization as Neoliberalism, Cosmopolitanism and Consumption, the Rise of Fundamentalisms, Nationalisms, and Identity Politics.
4. Literature Review Workshop, Consortium Library
5. ***Term Paper Topic Selection Decision***

B. <u>Development, Devolution, Discourse</u>

1. Development Theory
2. Videos: "Life and Debt" (IMF and Impact of Structural Adjustment Policies); David Graeber on the History of Debt.
3. Ethnographic reading on Capitalism and the Modern Workplace.
4. ***Assignment 1: Paper Topic Description***
5. ***Assignment 2: Thesis Statement***
6. ***Assignment 3: Paper Sections and Title***
7. ***Assignment 4: Paper Bibliography Draft Due***

C. <u>Mobility: Migration, Transnationalism, Diasporas</u>

1. Migration Theory.
2. Ethnographic Reading on Migration.
3. ***Assignment 5: Full Paper Outline***
4. ***Assignment 6: Final Draft Paper Bibliography***
5. ***Mid-Term Paper***
6. ***Assignment 7: Expansion Plan for Paper Due***
7. ***Assignment 8 & 9: Rough Draft of Paper Due***

D. Media, Technology, and Identity

1. Segue from Mobility Component: Identity Theory.
2. Media and New Technology Theory.
3. Ethnographic reading on Media and Identity: Media and Hegemony; Media and Resistance.
4. Videos "Nanook of the North" and excerpts from "The Fast Runner."
5. ***Assignment 10: Mini Paper Presentations***

E. Conclusions

1. Wrap-up: Cultural Homogenization vs. Cultural Adaptation.
2. ***Final Term Paper***

VII. Instructional Goals and Defined Outcomes

Instructional Goal	Student Outcomes	Assessment Procedures
Student engagement with course material through spirited and intellectual discussion of course materials; emphasis on rhetorical argument skills.	Rhetorical argument Socratic reasoning skills.	Class attendance, preparedness, participation.
Student familiarity with cultural dimensions of globalization and modernity.	Critical thinking and informed understandings and positions on the history and effects of large drivers of sociocultural change like globalization, what culture is, and the logic of cultural relativism.	Class attendance, preparedness, participation, position paper on theory reading.
Help students learn the research process.	Ability to construct a literature review, formulate a research question and argument, locate references, build a bibliography, and write by way of drafts.	Five assignments devoted to a step-by-step process for constructing a formal research paper.
Help students produce a formal piece of academic writing.	Academic writing skills.	Term paper.
Prepare students for thesis, professional report writing, and public presentations.	Argumentation, speaking, and writing skills.	Success in completion of the above assignments.

VIII. Suggested Texts

A. Theoretical Foundations:

Lewellen, Ted C. 2002. The Anthropology of Globalization: Cultural Anthropology Enters the 21st Century. Bergin and Garvey.

Additional readings for the graduate students (excerpts from the following):

Appadurai, Arjun. 1996. Modernity at Large: Cultural Dimensions of Globalization. Minneapolis: University of Minnesota Press.

Graeber, David. 2011. Debt: The First 5,000 Years. New York: Melville House.

Tsing, Anna Lowenhaupt. 2004. Friction: An Ethnography of Global Connections. Princeton: Princeton University Press.

B. Under Review (UAA Book of the Year):

Gladstone, Brooke. 2013. The Influencing Machine. New York: W.W. Norton and Company.

C. Ethnographies/Ethnographic Writings (Instructor will update periodically and **choose three main works** per semester):

Chavez, Leo. 1998. Shadowed Lives: Undocumented Immigrants in American Society. Wadsworth.

Chernoff, John. Hustling is not Stealing: Stories of an African Bar Girl. Chicago: University of Chicago Press.

Farrar, James. 2002. Opening Up: Youth, Sex, Culture and Market Reform in Shanghai. Chicago: University of Chicago Press.

Freeman, Carla. High Tech and High Heels in the Global Economy: Women, Work and Pink Collar Identities in the Caribbean Durham: Duke University Press.

Ginsburg, Faye. 2002. "Screen Memories: Resignifying the Traditional in Indigenous Media." In Media Worlds, Ginsburg, Abu-Lughod, and Larkin, eds. Berkeley: University of California Press. Pp. 39-57.

Holtzman, Jon D. 2008. Nuer Journeys, Nuer Lives: Sudanese Refugees in Minnesota. Boston: Pearson.

Hirsch, Jennifer. 2003. A Courtship After Marriage: Sexuality and Love in Mexican Transnational Families. Berkeley: University of California Press.

LaBennett, Oneka. 2011. She's Mad Real: Popular Culture and West Indian Girls in Brooklyn. New York: NYU Press.

Mazzarella, William. 2003. Shoveling Smoke: Advertising and Globalization in Contemporary India. Durham: Duke University Press.

Ntarangwi, Mwenda. 2009. East African Hip Hop: Youth Culture and Globalization. Champaign, IL: University of Illinois Press.

Mills, Mary Beth. 1999. Thai Women in the Global Labor Force. New Brunswick: Rutgers University Press.

Ngai, Pun. 2005. Made in China: Women Factory Workers in a Global Workplace. Durham: Duke University Press.

Rudnyckyj, Daromir. 2010. Spiritual Economies: Islam, Globalization, and the Afterlife of Development. Ithaca: Cornell University Press.

Said, Edward 1997. Covering Islam: How the Media and the Experts Determine How We See the Rest of the World. New York:Vintage.

Xiang, Biao. 2007. Global "Body Shopping": An Indian Labor System in the Information Technology Industry. Princeton: Princeton University Press.

D. Videos:

Black, Stephanie. 2001. Life and Debt.

Flaherty, Robert J. 1922. Nanook of the North.

Kunuk, Zacharias. 2002. The Fast Runner. (Excerpts in class; full-length on reserve)

IX. Bibliography and Resources

Cole, Jennifer and Deborah Durham 2006 Generations And Globalization: Youth, Age, and Family in the New World Economy. Indiana University Press.

Giddens, Anthony 2003 Runaway World: How Globalization is Reshaping Our Lives. Routledge.

Barber, Benjamin 1995 Introduction to *Jihad vs. McWorld*. Times Books.

Bell, Wendell 2004 "Humanity's Common Future: Seeking a Positive Future". *The Futurist*.

Bucholtz, Mary 2002 "Youth and Cultural Practice". *Annual Review of Anthropology*, 31:525-52.

Friedman, Thomas 2005 "It's a Flat World, After All". *The New York Times Magazine*, April 3, 2005.

Juergensmeyer, Mark 2004 "Holy Orders: Religious Opposition to Modern States". Harvard International Review, Winter 2004: 34-38.

Knudson, Tom 2004 "Shifting the pain: World's resources feed California's growing appetite". *The Sacramento Bee*, April 27, 2003.

Miller, Mark Crispin 2002 "What's Wrong With This Picture". The Nation, January 7-14:333-8536.

Sklair, Leslie 2004 "Sociology of the Global System". In *The Globalization Reader*, Lechner and Boli, eds. Malden, MA: Blackwell Publishing. Pp. 70-76.

Ramdas, Kavita 2006 "Feminists and Fundamentalists". *Current History*, 99-104.

Ruthven, Malise. 2007. Fundamentalism: A Very Short Introduction. New York: Oxford University Press.

Snyder, David Pearce 2004 "Five Meta-Trends Changing the World". *The Futurist*, July/August 2004.

Stiglitz, Joseph E. 2002 "Globalism's Discontents". *The American Prospect*, 13(1):1-14.

Vise, David A. 2005 "What Lurks in Its Soul?" *The Washington Post*, November 13, 2005.

Wilson, Chris 2006 "The Century Ahead". *Daedalus*, Winter 2006.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A483	NA	4	(3+2)

6. Complete Course Title
Archaeology of Animals

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☐ Change *or* ☒ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status choose one # of Repeats Max Credits

10. Grading Basis ☐ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2014 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with ANTH A683

Signature Cross-Listed Coordination

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anthropology BA/BS	10/31/2013	Paul White
2. Anthropology MA	10/31/2013	Paul White
3.		

Initiator Name (typed): Steve J. Langdon Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/2013

14. General Education Requirement *Mark appropriate box:*
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Methods and techniques for, and theoretical approaches to, the description, analysis, and interpretation of animal bone assemblages from archaeological sites. Inlcudes identification and quantification of animal remains, paleoenvironmental and dietary reconstruction, seasonality of stie occupation, hunting and herding strategies, and the role of animals in the economy and ideology of human societies.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
ANTH A211

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Program consolidation and revision, involving streamlining of course offerings for students. Content of course will be taught on a rotating basis with other archaeological artifact analyses under A480 Analytical Techniques

Initiator (faculty only) Date
Steve J. Langdon
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A683	NA	4	(3+2)

6. Complete Course Title
Zooarchaeology

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☐ Change *or* ☒ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status choose one # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2014 To: Fall/9999

12. ☐ Cross Listed with
☒ Stacked with A483 _____ Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. MA Anthropology	10/31/2013	Paul White
2.		
3.		

Initiator Name (typed): Steve J. Langdon Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/2013

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Methods and techniques for, and theoretical approaches to the description, analysis, and interpretation of animal bone assemblages from archaeological sites….Independent research in zooarchaeology involving preparation of comparative osteological materials and/or analysis of an assemblage of archaeological faunal materials.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Graduate standing

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Program consolidation and revision, involving streamlining of course offerings for students. The course materials will be taught on a rotating, as needed basis under Anth A680 Analytical Techniques.

Initiator (faculty only) Date
Steve J. Langdon
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A484	NA	3	(3+0)

6. Complete Course Title
Lithic Technology

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☐ Change *or* ☒ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status choose one # of Repeats Max Credits

10. Grading Basis ☐ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall /2014 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with

Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anthropology BA	10/31/2013	Paul White
2. Anthropology BS	10/31/2013	Paul White
3. Anthropology MA	10/31/2013	Paul White

Initiator Name (typed): _____ Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/2013

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Analysis of stone tool assemblages from archaeological sites, focusing on tool manufacture, use, and discard processes. Includes tool replication as part of learning the manufacturing process.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
ANTH A211

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Program consolidation and revision, involving streamlining of course offerings for students. Content of course will be taught on a rotating basis with other archaeological artifact analyses under A480 Analytical Techniques.

Initiator (faculty only) Date
Steve J. Langdon
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A485	NA	4	(3+2)

6. Complete Course Title
Human Osteology

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☐ Change *or* ☒ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status choose one # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2014 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with A685 _____ Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anth BA/BS	10/31/2013	Paul White
2. Anth MA	10/31/2013	Paul White
3. Pre-Health Sciences Major	10/31/2013	Quentin Reuer

Initiator Name (typed): Steve J. Langdon Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/2013

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Methods of human skeletal identification, description, and analysis. Includes identification of age and sex attributes. Lecture and laboratory format.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
ANTH A205

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Program consolidation and revision, involving streamlining of course offerings for students. Content will taught in new format under new course.

Initiator (faculty only) Date
Steve J. Langdon
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A486	NA	3	(3+0)

6. Complete Course Title
Applied Human Osteology

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☐ Change *or* ☒ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status choose one # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall /2014 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with ANTH A686

Signature Cross-Listed Coordination

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anthropology BA/BS	10/31/2013	Paul White
2. Anthropology MA	10/31/2013	Paul White
3. Pre-Health Sciences Approved Courses Social Science	10/31/2013	Quentin Reuer

Initiator Name (typed): Steve J Langdon Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/13/31
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/2013

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Methods and techniques of the applications of human osteology, including paelopathology, bioarchaeology, and forensic anthropology. Includes identification and analysis of age, sex, and population attributes from human skeletal remains.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
ANTH A485

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Program consolidation and revision, involving streamlining of course offerings for students.

Initiator (faculty only) Date
Steve J. Langdon
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	ASSC Division of Social Science	Anthropology

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
ANTH	A686	NA	3	(3+0)

6. Complete Course Title
Advanced Applied Human Osteology

Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☐ Change *or* ☒ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status choose one # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2014 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with ANTH A486 _____ Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Anthropology MA	10/31/2013	Paul White
2.		
3.		

Initiator Name (typed): Steve J. Langdon Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 10/31/2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 10/31/2013

14. General Education Requirement *Mark appropriate box:*
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Methods, techniques, and theory of the applications of human osteology, including paleopathology, bioarchaeology, and forensic anthropology. Includes identification and analysis of age, sex, and population attributes from human skeletal remains, and the methods and theory of statistical interpretation of human skeletal data.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
ANTH A485 or ANTH A685

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Graduate standing

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Program consolidation and revision, involving streamlining of course offerings for students. Course content will be taught with new format under different course.

Initiator (faculty only) Date
Steve J. Langdon
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

Program/Prefix Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

1a. School or College	1b. Department
AS CAS	Anthropology

2. Complete Program Title/Prefix
Bacherlor of Arts, Anthropology

3. Type of Program

Choose one from the appropriate drop down menu: Undergraduate: Bachelor of Arts or Graduate: CHOOSE ONE

This program is a Gainful Employment Program: ☐ Yes or ☒ No

4. Type of Action:

PROGRAM	**PREFIX**
☐ Add	☐ Add
☒ Change	☐ Change
☐ Delete	☐ Inactivate

5. Implementation Date (semester/year)
From: Fall/2014 To: Fall/9999

6a. Coordination with Affected Units Department, School, or College: CAS

Initiator Name (typed): Steve J. Langdon Initiator Signed Initials: _____
Date:_____

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu) Date: 10/31/2013

6c. Coordination with Library Liaison Date: 10/31/2013

7. Title and Program Description - Please attach the following:

☒ Cover Memo ☒ Catalog Copy in Word using the track changes function

8. Justification for Action
Revisions of courses to streamline offerings to make more efficient for students.

Initiator (faculty only) Date Steve J. Langdon Initiator (TYPE NAME)	☐ Approved ☐ Disapproved Dean/Director of School/College Date
☐ Approved ☐ Disapproved Department Chair Date	☐ Approved ☐ Disapproved Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved Provost or Designee Date

Program/Prefix Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

1a. School or College AS CAS	1b. Department Anthropology

2. Complete Program Title/Prefix
Bachelor of Sciences, Anthropology

3. Type of Program

Choose one from the appropriate drop down menu: Undergraduate: Bachelor of Science or Graduate: CHOOSE ONE

This program is a Gainful Employment Program: ☐ Yes or ☒ No

4. Type of Action:

PROGRAM	**PREFIX**
☐ Add	☐ Add
☒ Change	☐ Change
☐ Delete	☐ Inactivate

5. Implementation Date (semester/year)
From: Fall/2014 To: Fall/9999

6a. Coordination with Affected Units Department, School, or College: CAS

Initiator Name (typed): Steve J. Langdon Initiator Signed Initials: _____
Date:_____

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu) Date: 10/31/2013

6c. Coordination with Library Liaison Date: 10/31/2013

7. Title and Program Description - Please attach the following:

☒ Cover Memo ☒ Catalog Copy in Word using the track changes function

8. Justification for Action
Revisions of courses to streamline offerings to make more efficient for students

Initiator (faculty only) Date Steve J. Langdon Initiator (TYPE NAME)	☐ Approved ☐ Disapproved Dean/Director of School/College Date
☐ Approved ☐ Disapproved Department Chair Date	☐ Approved ☐ Disapproved Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved Provost or Designee Date

ANTHROPOLOGY

Political Science Building, PSB 104, (907) 786-6840
www.uaa.alaska.edu/anthropology

Anthropology is the study of human diversity on a cross-cultural basis, aimed at achieving both scientific and humanistic education goals. Anthropology is comprised of four sub-fields: sociocultural anthropology, biological anthropology, archaeology and anthropological linguistics. The BA/BS degrees are designed to provide the student with a solid general foundation in the discipline by emphasizing understanding of different cultures and peoples as well as different theories and methodologies. Although there is some opportunity for limited specialization in either archaeology or sociocultural anthropology and in Alaska studies, the department believes that such specialization should be deferred until graduate work.

Honors in Anthropology

The award of honors in Anthropology recognizes outstanding achievement by undergraduate majors in the study of anthropology. To be eligible for departmental honors, a student must satisfy the following requirements:

1. Be a declared Anthropology major.
2. Satisfy all of the requirements for a BA or BS degree in Anthropology.
3. Meet the requirements for Graduation with Honors, as listed in Chapter 7.
4. Earn a grade point average of 3.50 or above in courses specific to the Anthropology major.
5. Complete a senior thesis project (taken as ANTH A499), based on library, laboratory or field research resulting in a substantial, thesis-quality paper defended before the Anthropology faculty. Note: the course may be taken on a one-semester (3-credit) or two-semester (6-credit) basis.

Bachelor of Arts, Anthropology

Bachelor of Science, Anthropology

Program Student Learning Outcomes

Students graduating with a Bachelor of Arts in Anthropology or a Bachelor of Science in Anthropology will be able to:

- Explain current understandings about human beings and behavior including the evolution of humans, the nature of culture and cultural processes, the features of language and characteristics of linguistic use, the forms of biological diversity and the significant trajectories of change which have led to the current status of humanity.
- Demonstrate an understanding of different scientific and theoretical approaches in anthropology, their epistemological and conceptual foundations, their strengths and limitations, and the types of topics, issues and problems they are designed to address.
- Apply liberal educational skills, such as independent knowledge acquisition, problem identification, critical thinking, formation and evaluation of hypotheses, and organized and effective presentation of information, to anthropological materials demonstrated through various types of presentation including scientific and technical writing, effective public speaking and electronic media presentation.
- Demonstrate ability to apply anthropological concepts and perspectives to understanding local social and cultural practices occurring outside the classroom in the community.

Admission Requirements

Complete the Admission to Baccalaureate Programs Requirements in Chapter 7.

Graduation Requirements

Students must complete the following graduation requirements:

A. General University Requirements

Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

B. General Education Requirements

Complete the General Education Requirements for Baccalaureate Degrees listed at the beginning of this chapter.

C. College of Arts and Sciences Requirements

Complete the College of Arts and Sciences Requirements for either a BA or BS degree listed at the beginning of the CAS section.

D. Major Requirements

Bachelor of Arts, Anthropology

1. Complete 36 credits from items 2 through 6, 18 of which must be upper division credits.
2. Complete three of the following core courses (9 credits): 9

ANTH A202	Cultural Anthropology (3)
ANTH A205	Biological Anthropology (3)
ANTH A210	Introduction to Linguistic Anthropology (3)
ANTH A211	Fundamentals of Archaeology (3)

3. Complete the following courses (6 credits):

ANTH A250	Rise of Civilization	3
ANTH A410	History of Anthropology	3

4. Complete three ethnographic area courses from the following: 9

ANTH A200	Natives of Alaska (3)
ANTH A325	Cook Inlet Anthropology (3)
ANTH A335	Native North Americans (3)
ANTH A336	Peoples and Cultures of South America (3)
ANTH A427	Ethnohistory of Alaska Natives (3)
ANTH A429	Contemporary Alaska Native Societies (3)
ANTH A434	Peoples and Cultures of Northeast Asia (3)
ANTH A436	Aleut Adaptations (3)
ANTH A437	Eskimo Adaptations (3)
ANTH A438	Tlingit and Haida Adaptations
ANTH A439	Athabaskan Adaptations (3)

Of the following ethnographic area courses which emphasize archaeology, no more than 6 credits can be used to satisfy the ethnographic area requirement:

ANTH A312	North American Archaeology (3)
ANTH A413	Peopling of the Americas (3)
ANTH A416	Arctic Archaeology (3)

5. Complete two courses (6 credits) from the following topical/theoretical courses: 6

ANTH A270	Women in Cross-cultural Perspective (3)
ANTH A324	Psychological Anthropology (3)
ANTH A360	Anthropology of Art (3)
ANTH A361	Language and Culture (3)
ANTH A365	Modern Human Biological Diversity (3)

ANTH A375	Introduction to Cultural Resource Management (3)
ANTH A400	Anthropology of Religion (3)
ANTH A415	Applied Anthropology (3)
ANTH A425	Archaeology of Identity (3)
ANTH A432	Hunting and Gathering Societies (3)
ANTH A445	Evolution of Humans and Disease (3)
ANTH A454	Culture and Ecology (3)
ANTH A455	Medical Anthropology (3)
ANTH A457	Food and Nutrition: An Anthropological Perspective (3)
ANTH A460	Peace, War, and Violence: An Anthropological Perspective (3)
ANTH A465	Culture and Globalization
ANTH A476	Ethical Issues in Archaeology (3)
ANTH A480	Analytical Techniques in Archaeology (3)
ANTH A481	Museum Studies in Anthropology (3)
ANTH A482	Historical Archaeology (3)

Note: The upper division special topics course (ANTH A490) or independent study courses (ANTH A397, ANTH A497) may be petitioned to satisfy ethnographic area or topical/theoretical course requirements, depending on course content.

6. Anthropology electives: Any 6 credits in Anthropology 6
7. Complete one statistics course from the following: 3-4

STAT A252	Elementary Statistics (3)
STAT A253	Applied Statistics for the Sciences (4)
STAT A307	Probability and Statistics (4)

8. A minimum of 120 credits is required for the degree, of which 42 credits must be upper division to satisfy General Education Requirements.

Bachelor of Science, Anthropology

1. Complete 36 credits from items 2 through 6, 18 of which must be upper division credits.
2. Complete three of the following core courses: 9

ANTH A202	Cultural Anthropology (3)
ANTH A205	Biological Anthropology (3)
ANTH A210	Introduction to Linguistic Anthropology (3)
ANTH A211	Fundamentals of Archaeology (3)

3. Complete the following courses: 6

ANTH A250	Rise of Civilization (3)
ANTH A410	History of Anthropology (3)

4. Complete three ethnographic area courses from the following: 9

ANTH A200	Natives of Alaska (3)
ANTH A325	Cook Inlet Anthropology (3)
ANTH A335	Native North Americans (3)
ANTH A336	Peoples and Cultures of South America (3)
ANTH A427	Ethnohistory of Alaska Natives (3)
ANTH A429	Contemporary Alaska Native Societies (3)
ANTH A434	Peoples and Cultures of Northeast Asia (3)

ANTH A436	Aleut Adaptations (3)
ANTH A437	Eskimo Adaptations (3)
ANTH A438	Tlingit and Haida Adaptations (3)
ANTH A439	Athabaskan Adaptations (3)

Of the following ethnographic area courses which emphasize archaeology, no more than 6 credits can be used to satisfy the ethnographic area requirement:

ANTH A312	North American Archaeology (3)
ANTH A413	Peopling of the Americas (3)
ANTH A416	Arctic Archaeology (3)

5. Complete two courses from the following topical/ theoretical courses: 6

ANTH A270	Women in Cross-cultural Perspective (3)
ANTH A324	Psychological Anthropology (3)
ANTH A350	Survey of the Primates (3)
ANTH A360	Anthropology of Art (3)
ANTH A361	Language and Culture (3)
ANTH A365	Modern Human Biological Diversity (3)
ANTH A375	Introduction to Cultural Resource Management (3)
ANTH A400	Anthropology of Religion (3)
ANTH A415	Applied Anthropology (3)
ANTH A425	Archaeology of Identity (3)
ANTH A432	Hunting and Gathering Societies (3)
ANTH A445	Evolution of Humans and Disease (3)
ANTH A450	Human Evolution (3)
ANTH A454	Culture and Ecology (3)
ANTH A455	Medical Anthropology (3)
ANTH A457	Food and Nutrition: An Anthropological Perspective (3)
ANTH A460	Peace, War, and Violence: An Anthropological Perspective (3)
ANTH A465	Culture and Globalization (3)
ANTH A476	Ethical Issues in Archaeology (3)
ANTH A480	Analytical Techniques in Archaeology (3)
ANTH A481	Museum Studies in Anthropology (3)
ANTH A482	Historical Archaeology (3)

Note: The upper division special topics course (ANTH A490) or independent study courses (ANTH A397, ANTH A497) may be petitioned to satisfy ethnographic area or topical/theoretical course requirements, depending on course content.

6. Anthropology Electives: 6

Any six courses in Anthropology

7. Complete one statistics course from the following: 4

STAT A253	Applied Statistics for the Sciences (4)
	or
STAT A307	Probability and Statistics (4)

8. A minimum of 120 credits is required for the degree, of which 42 credits must be upper division to satisfy General Education Requirements.

Minor, Anthropology

Students majoring in another subject who wish to minor in Anthropology must complete the following requirements. A total of 18 credits is required for the minor, 6 of which must be upper division.

1. Select two courses (6 credits) from the following: 6

ANTH A101	Introduction to Anthropology (3)
ANTH A202	Cultural Anthropology (3)
ANTH A205	Biological Anthropology (3)
ANTH A210	Introduction to Linguistic Anthropology (3)
ANTH A211	Fundamentals of Archaeology (3)
ANTH A250	Rise of Civilization (3)

2. Complete at least one course (3 credits) from either the ethnographic area or the topical/theoretical area, as specified above for majors in Anthropology. 3
3. Complete three courses (9 credits) of Anthropology electives. 9

FACULTY

Alan Boraas, Professor (KPC campus), IFASB@uaa.alaska.edu
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Phyllis Fast, Professor Emeritus, pafast@uaa.alaska.edu
Kerry Feldman, Professor Emeritus, kdfeldman@uaa.alaska.edu
Diane Hanson, Associate Professor, dkhanson@uaa.alaska.edu
Ryan Harrod, Assistant Professor, rharrod2@uaa.alaska.edu
Catherine Knott, Assistant Professor (KPC campus), chknott@kpc.alaska.edu
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William Workman, Professor Emeritus, AFWBW@uaa.alaska.edu
David Yesner, Professor, dryesner@uaa.alaska.edu

ANTHROPOLOGY

Beatrice McDonald Hall (BMH), Room 214, (907) 786-6840
www.uaa.alaska.edu/anthropology

Anthropology is the study of human diversity on a cross-cultural basis, aimed at achieving both scientific and humanistic education goals. Anthropology is comprised of four sub-fields: sociocultural anthropology, biological anthropology, archaeology and anthropological linguistics. The BA/BS degrees are designed to provide the student with a solid general foundation in the discipline by emphasizing understanding of different cultures and peoples as well as different theories and methodologies. Although there is some opportunity for limited specialization in either archaeology or sociocultural anthropology and in Alaska studies, the department believes that such specialization should be deferred until graduate work.

Honors in Anthropology

The award of honors in Anthropology recognizes outstanding achievement by undergraduate majors in the study of anthropology. To be eligible for departmental honors, a student must satisfy the following requirements:

1. Be a declared Anthropology major.
2. Satisfy all of the requirements for a BA or BS degree in Anthropology.
3. Meet the requirements for Graduation with Honors, as listed in Chapter 7.
4. Earn a grade point average of 3.50 or above in courses specific to the Anthropology major.
5. Complete a senior thesis project (taken as ANTH A499), based on library, laboratory or field research resulting in a substantial, thesis-quality paper defended before the Anthropology faculty. Note: the course may be taken on a one-semester (3-credit) or two-semester (6-credit) basis.

Bachelor of Arts, Anthropology

Bachelor of Science, Anthropology

Program Student Learning Outcomes

Students graduating with a Bachelor of Arts in Anthropology or a Bachelor of Science in Anthropology will be able to:

- Explain current understandings about human beings and behavior including the evolution of humans, the nature of culture and cultural processes, the features of language and characteristics of linguistic use, the forms of biological diversity and the significant trajectories of change which have led to the current status of humanity.
- Demonstrate an understanding of different scientific and theoretical approaches in anthropology, their epistemological and conceptual foundations, their strengths and limitations, and the types of topics, issues and problems they are designed to address.
- Apply liberal educational skills, such as independent knowledge acquisition, problem identification, critical thinking, formation and evaluation of hypotheses, and organized and effective presentation of information, to anthropological materials demonstrated through various types of presentation including scientific and technical writing, effective public speaking and electronic media presentation.
- Demonstrate ability to apply anthropological concepts and perspectives to understanding local social and cultural practices occurring outside the classroom in the community.

Admission Requirements

Complete the Admission to Baccalaureate Programs Requirements in Chapter 7.

Graduation Requirements

Students must complete the following graduation requirements:

A. General University Requirements

Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

B. General Education Requirements

Complete the General Education Requirements for Baccalaureate Degrees listed at the beginning of this chapter.

C. College of Arts and Sciences Requirements

Complete the College of Arts and Sciences Requirements for either a BA or BS degree listed at the beginning of the CAS section.

D. Major Requirements

Bachelor of Arts, Anthropology

1. Complete 36 credits from items 2 through 6, 18 of which must be upper division credits.
2. Complete three of the following core courses (9 credits): 9

ANTH A202	Cultural Anthropology (3)	
ANTH A205	Biological Anthropology (3)	
ANTH A210	Introduction to Linguistic Anthropology (3)	
ANTH A211	Fundamentals of Archaeology (3)	

3. Complete the following courses (6 credits):

ANTH A250	Rise of Civilization	3
ANTH A410	History of Anthropology	3

4. Complete three ethnographic area courses from the following: 9

ANTH A200	Natives of Alaska (3)
ANTH A325	Cook Inlet Anthropology (3)
ANTH A335	Native North Americans (3)
ANTH A336	Peoples and Cultures of South America (3)
~~ANTH A338~~	~~Peoples and Cultures of Scandinavia (3)~~
ANTH A427	Ethnohistory of Alaska Natives (3)
ANTH A429	Contemporary Alaska Native Societies (3)
ANTH A434	Peoples and Cultures of Northeast Asia (3)
~~ANTH A435~~	~~Northwest Coast Cultures (3)~~
ANTH A436	Aleut Adaptations (3)
ANTH A437	Eskimo Adaptations (3)
ANTH A438	Tlingit and Haida Adaptations
ANTH A439	Athabaskan Adaptations (3)

Of the following ethnographic area courses which emphasize archaeology, no more than 6 credits can be used to satisfy the ethnographic area requirement:

ANTH A312	North American Archaeology (3)
ANTH A413	Peopling of the Americas (3)
ANTH A416	Arctic Archaeology (3)

5. Complete two courses (6 credits) from the following topical/theoretical courses: 6

ANTH A270	Women in Cross-cultural Perspective (3)
ANTH A324	Psychological Anthropology (3)
ANTH A354	Culture and Ecology (3)
ANTH A360	Anthropology of Art (3)
ANTH A361	Language and Culture (3)
ANTH A365	Modern Human Biological Diversity (3)
ANTH A375	Introduction to Cultural Resource Management (3)
ANTH A400	Anthropology of Religion (3)
ANTH A415	Applied Anthropology (3)
ANTH A425	Archaeology of Identity (3)
ANTH A432	Hunting and Gathering Societies (3)
ANTH A445	Evolution of Humans and Disease (3)
ANTH A455	Medical Anthropology (3)
ANTH A457	Food and Nutrition: An Anthropological Perspective (3)
ANTH A460	Peace, War, and Violence: An Anthropological Perspective (3)
ANTH A465	Culture and Globalization (3)

ANTH A476 Ethical Issues in Archaeology (3)
ANTH A480 Analytical Techniques in Archaeology (3)
ANTH A481 Museum Studies in Anthropology (3)
ANTH A482 Historical Archaeology (3)
~~ANTH A484 Lithic Technology (3)~~
~~ANTH A485 Human Osteology (3)~~
~~ANTH A486 Applied Human Osteology (3)~~

Note: The upper division special topics course (ANTH A490) or independent study courses (ANTH A397, ANTH A497) may be petitioned to satisfy ethnographic area or topical/theoretical course requirements, depending on course content.

6. Anthropology electives: Any 6 credits in Anthropology 6
7. Complete one statistics course from the following: 3-4

STAT A252 Elementary Statistics (3)
STAT A253 Applied Statistics for the Sciences (4)
STAT A307 Probability and Statistics (4)

8. A minimum of 120 credits is required for the degree, of which 42 credits must be upper division to satisfy General Education Requirements.

Bachelor of Science, Anthropology

1. Complete 36 credits from items 2 through 6, 18 of which must be upper division credits.
2. Complete three of the following core courses: 9

ANTH A202 Cultural Anthropology (3)
ANTH A205 Biological Anthropology (3)
ANTH A210 Introduction to Linguistic Anthropology (3)
ANTH A211 Fundamentals of Archaeology (3)

3. Complete the following courses: 6

ANTH A250 Rise of Civilization (3)
ANTH A410 History of Anthropology (3)

4. Complete three ethnographic area courses from the following: 9

ANTH A200 Natives of Alaska (3)
ANTH A325 Cook Inlet Anthropology (3)
ANTH A335 Native North Americans (3)
ANTH A336 Peoples and Cultures of South America (3)
~~ANTH A338 Peoples and Cultures of Scandinavia (3)~~
ANTH A427 Ethnohistory of Alaska Natives (3)
ANTH A429 Contemporary Alaska Native Societies (3)
ANTH A434 Peoples and Cultures of Northeast Asia (3)
~~ANTH A435 Northwest Coast Cultures (3)~~
ANTH A436 Aleut Adaptations (3)
ANTH A437 Eskimo Adaptations (3)
ANTH A438 Tlingit and Haida Adaptations
ANTH A439 Athabaskan Adaptations (3)

Of the following ethnographic area courses which emphasize archaeology, no more than 6 credits can be used to satisfy the ethnographic area requirement:

ANTH A312 North American Archaeology (3)
ANTH A413 Peopling of the Americas (3)
ANTH A416 Arctic Archaeology (3)

5. Complete two courses from the following topical/theoretical courses: 6

ANTH A270 Women in Cross-cultural Perspective (3)
ANTH A324 Psychological Anthropology (3)

ANTH A350	Survey of the Primates (3)
ANTH A354	Culture and Ecology (3)
ANTH A360	Anthropology of Art (3)
ANTH A361	Language and Culture (3)
ANTH A365	Modern Human Biological Diversity (3)
ANTH A375	Introduction to Cultural Resource Management (3)
ANTH A400	Anthropology of Religion (3)
ANTH A415	Applied Anthropology (3)
ANTH A425	Archaeology of Identity (3)
ANTH A432	Hunting and Gathering Societies (3)
ANTH A445	Evolution of Humans and Disease (3)
ANTH A450	Human Evolution (3)
ANTH A454	Culture and Ecology (3)
ANTH A455	Medical Anthropology (3)
ANTH A457	Food and Nutrition: An Anthropological Perspective (3)
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ANTH A465	Culture and Globalization (3)
ANTH A476	Ethical Issues in Archaeology (3)
ANTH A480	Analytical Techniques in Archaeology (3)
ANTH A481	Museum Studies in Anthropology (3)
ANTH A482	Historical Archaeology (3)
~~ANTH A484~~	~~Lithic Technology (3)~~
~~ANTH A485~~	~~Human Osteology (3)~~
~~ANTH A486~~	~~Applied of Human Osteology (3)~~

Note: The upper division special topics course (ANTH A490) or independent study courses (ANTH A397, ANTH A497) may be petitioned to satisfy ethnographic area or topical/theoretical course requirements, depending on course content.

6. Anthropology Electives: 6

   Any six courses in Anthropology

7. Complete one statistics course from the following: 4

STAT A253	Applied Statistics for the Sciences (4)
	or
STAT A307	Probability and Statistics (4)

8. A minimum of 120 credits is required for the degree, of which 42 credits must be upper division to satisfy General Education Requirements.

Minor, Anthropology

Students majoring in another subject who wish to minor in Anthropology must complete the following requirements. A total of 18 credits is required for the minor, 6 of which must be upper division.

1. Select two courses (6 credits) from the following: 6

ANTH A101	Introduction to Anthropology (3)
ANTH A202	Cultural Anthropology (3)
ANTH A205	Biological Anthropology (3)
ANTH A210	Introduction to Linguistic Anthropology (3)
ANTH A211	Fundamentals of Archaeology (3)
ANTH A250	Rise of Civilization (3)

2. Complete at least one course (3 credits) from either the ethnographic area or the topical/theoretical area, as specified above for majors in Anthropology. 3
3. Complete three courses (9 credits) of Anthropology electives. 9

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Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A108	N/A	6	(3+9)

6. Complete Course Title
Principles and Methods in Biology
Principles & Methods Biology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. See separate table		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☒ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Introduces the biological sciences through an exploration of core themes and fundamental skills. Exposes students to biological theory and laboratory practice through integrated lecture and experiential learning modules.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
CHEM A105 with minimum grade of C or concurrent enrollment

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This is a new introductory biology course meant to replace our traditional 2-semester intro series (BIOL A115 and BIOL A116). This change is part of our overall curriculum revision, which seeks to align our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science)

		☐ Approved ☐ Disapproved	
Initiator (faculty only) Khrys Duddleston Initiator (TYPE NAME)	Date	Dean/Director of School/College	Date
☐ Approved ☐ Disapproved	Department Chair	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair
	Date		Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair	☐ Approved ☐ Disapproved	Provost or Designee
	Date		Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Initiation Date: Spring 2014

II. Course Information

A.	College:	College of Arts and Sciences
B.	Course prefix:	BIOL
C.	Course Number:	A108
D.	Number of credits:	6
E.	Contact Hours:	3+9
F.	Course Title:	Principles and Methods in Biology
G.	Grading Basis:	A-F
H.	Implementation Date:	Fall 2015
I.	Cross-listed/ Stacked:	N/A
J.	Course Description:	Introduces the biological sciences through an exploration of core themes and fundamental skills. Exposes students to biological theory and laboratory practice through integrated lecture and experiential learning modules.
K.	Course Prerequisites:	CHEM A105 with minimum grade of C or concurrent enrollment
L.	Course Co-requisites:	N/A
M.	Other restrictions:	N/A
N.	Registration Restrictions:	N/A
O.	Course Fees:	Yes

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. In each module, assign and lead discussions of relevant and essential background literature in experimental design and critical thinking skills relevant to the module's theme.
2. Guide the students in learning exercises and demonstrate appropriate skills
3. Provide feedback and criticism on student writing, presentation, and critical thinking processes to help develop student skills in these areas.

B. Student Learning Outcomes and Assessment Measures:

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Demonstrate scientific writing and presentation skills	In class presentations, written assignments, peer evaluation and feedback
2. Demonstrate ability to generate and present scientific data	In class presentations, written assignments, and/or examinations
3. Demonstrate competency in and understanding of core concepts in biological sciences	In class presentations, written assignments, and/or examinations

IV. Course Level Justification

Introducing students to core themes and skills foundational to further learning in the biological and natural sciences.

V. Topical Course Outline

The course will be organized into three major sections, each with closely linked lecture and experiential learning materials and activities. The specific examples used within each module will vary by semester, but modules will be constructed around core biological concepts and competencies.

A. Core biological concepts: Each module will focus on one or two of the following core concepts in the biological sciences such that all four are incorporated into a single semester.
    a. Evolutionary theory (focus of module 1; underlies all additional concepts)
        i. Inheritance
        ii. Change
        iii. Adaptation
    b. Transformation of energy and matter
        i. Principles of thermodynamics
        ii. Energy flow through systems
    c. Structure and function: basic units of structure define functions of all living things
        i. Structure
            1. Within organisms
            2. Among organisms
        ii. Function
            1. Metabolic processes
            2. Population processes
    d. Informational theory (information flow, exchange, storage)
        i. Genetic information
        ii. Information storage, control, usage and transmission
B. Core biological competencies: Specified learning objectives for each module will ensure that all students achieve the necessary skills to progress to 200 level courses in the field.
    a. Module 1: Introduction to basic biological processes and skills
        i. Diversity of scientific ways of knowing
        ii. Structure of scientific literature and writing
        iii. Basic laboratory skills for the sciences
        iv. Hypothesis testing
        v. Experimental design
    b. Module 2: Data gathering, assessment, understanding and presentation
        i. Design and conduct experiments
        ii. Basic statistical skills common across the sciences
        iii. Generating tables and figures from data
        iv. Present quantifiable data
        v. Organizing short presentations
    c. Module 3: Scientific writing and presentation skills, demonstrating competence in core skills
        i. Organization of papers and presentations
        ii. Comparing “good” vs. “bad” writing in the sciences
        iii. Produce and present complete experimental report
        iv. Drawing conclusions from data – facts vs. theories
        v. Presenting convincing scientific cases

VI. Suggested Texts

Alley, M. The Craft of Scientific Writing. Springer-Verlag. 1996.

Reece, J.B., N.A. Campbell, M.L. Cain. Campbell Biology, 9th edition. Benjamin

Cummings. 2010.

Mastering Biology, Pearson, http://www.masteringbiology.com/

VII. Bibliography

Raven, P.H., G.B. Johnson, J. Losos, S. Singer. Biology, 7th edition. McGraw-Hill. 2011.

Selected articles from journals such as:
Cell, Genetics, Journal of Ecology, Journal of Evolutionary Biology, PLOS One, Nature, Proceedings of the National Academies of Sciences, Science

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A442	N/A	3	(1+4)

6. Complete Course Title
Experiential Learning: Animal Behavior
EL: Animal Behavior
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Theory and practice in research methods and analysis in animal behavior. Students conduct research in areas such as foraging behavior, communication, predator avoidance, sensory systems and social behaviors

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A273 with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
BIOL A441

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course replaces the laboratory component of BIOL A441, which is being removed. This change is part of our overall curriculum revision, which seeks to align our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science)

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A442
D. Number of Credits:	3
E. Contact Hours:	1+4
F. Course Title:	Experiential Learning: Animal Behavior
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	Theory and practice in research methods and analysis in animal behavior. Students conduct research in areas such as foraging behavior, communication, predator avoidance, sensory systems and social behaviors.
K. Course Prerequisites:	BIOL A273 with minimum grade of C
L. Course Co-requisites:	BIOL A441
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	Yes

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Provide an introduction to the scientific exploration of animal behavior including the history, theory, and methods.
2. Offer the opportunity to watch animals in the wild with a scientist's eyes and mind by thinking about their behavior in the context of natural selection and evolution.
3. Give students hands on experiences collecting data using appropriate behavioral sampling techniques and interpreting data using appropriate statistical methods.
4. Explain the components of effective communication, and provide assignments that allow the students to practice these skills.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Apply the scientific process to formulate a question of interest in behavior to be tested in the field and/or laboratory.	Written assignments or oral presentations
2. Design and conduct an independent investigation to test hypotheses relating to animal behavior.	Written assignments and/or media assignments
3. Use relevant evidence gathered through	Written assignments

accepted scholarly methods and properly acknowledge sources of information	
4. Use statistical analyses appropriate to the independent investigation.	Written assignments
5. Effectively communicate one's findings both verbally and in writing.	Written assignments and oral presentations
6. Demonstrate critical thinking in the evaluation of scientific findings.	Written assignments, oral presentations, and classroom discussions

IV. Course Level Justification

Designed for Biology and Natural Sciences majors as an elective undergraduate course comparable to 400-level animal behavior or behavioral ecology courses offered at other universities. This course covers the principle concepts essential to the student's ability to succeed in graduate programs and career pathways relevant to the discipline of animal behavior.

V. Topical Course Outline

A. Introduction to methods of behavioral observation
   1. Scan sampling
   2. Focal animal sampling
   3. Ad lib sampling
   4. All occurrences sampling
B. Experimental design
C. Literature review
D. Pilot data collection
E. Project proposal
F. Data collection
G. Data analysis and statistics
H. Writing the scientific paper
I. Presenting the Results

VI. Suggested Texts

Martin P, and Bateson P. *Measuring Behavior: An Introductory Guide*. 3rd ed. Cambridge, UK: Cambridge University Press. 2007.

VII. Bibliography

Altmann J. Observational study of behavior: Sampling methods. *Behaviour*. 1974. 49: 227-265.

Dawkins M. *Observing Animal Behaviour: Design and Analysis of Quantitive Controls*. Cary, NC: Oxford University Press. 2007.

Lehner PN. *Handbook of Ethological Methods*. 2nd ed. Cambridge, UK: Cambridge University Press. 1998.

Lowry R. VassarStats: Website for Statistical Computation. Available at http://vassarstats.net/. Accessed November 26, 2013.

Whitehead H. SOCPROG programs: analysing animal social structures. *Behavioral Ecology and Sociobiology*. 2009. 63: 765-778.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A451	N/A	3	(3+0)

6. Complete Course Title
Microbial Biotechnology
Microbial Biotechnology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☒ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☒ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Application of microbiology for improvement of human kind, including genetic engineering of microorganisms to produced products of importance to human health, microbe-based foods and beverages, microbe-based bio-control, biofuels and bioremediation

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A340 with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course is part of an overall revision of the Biological Sciences curriculum. The course description is being updated and the name is being change to better reflect the content of the course. Stacking with BIOL A651 is being removed (BIOL A651 is being deleted).

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A451
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Microbial Biotechnology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	Application of microbiology for improvement of human kind, including genetic engineering of microorganisms to produce products of importance to human health, microbe-based foods and beverages, microbe-based bio-control, biofuels and bioremediation
K. Course Prerequisites:	BIOL A340 with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Present the principle concepts behind the applied use of microorganisms in a variety of fields
2. Provide examples of the design, growth, and processing of microorganisms for human benefit
3. Describe the production of microbial-based foods and beverages on a large scale
4. Describe the use of microorganisms in agriculture and in reclamation of contaminated sites.
5. Discuss the latest research findings relevant to the use of microorganism for improvement of human

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1) Demonstrate understanding of the use of traditional and molecular techniques to manipulate the genetic make-up of microorganisms	Written assignments and examinations
2) Propose the construction of a genetically modified microorganism for release into the	Project, paper, oral presentation and in class discussions

environment and defend that proposal on scientific, ethical and economic means	
3) Evaluate the factors affecting the use of microorganisms in agriculture and bioremediation	Written assignments, in class discussions, examinations
4) Demonstrate understanding of the production of microbially-based foods and beverages	Written assignments, examinations
5) Evaluate the primary literature in applied microbiology and microbial biotechnology	Written assignments, examinations

IV. Course Level Justification

This course builds upon knowledge of microbiology, cell biology and genetics. It is equivalent to other 400-level courses in applied microbiology and microbial biotechnology at other universities.

V. Topical Course Outline

A. Molecular Microbial Biotechnology
   1. Methods of strain development
      a. pre-recombinant DNA technology
      b. post-recombinant DNA technology
   2. Cloning
      a. bacteria
      b. yeast
   3. Expression of foreign DNA
   4. Growth of modified microbes
   5. Downstream processing

B. Microbes as Living Factories
   1. Biocatalysis of useful products
   2. Large-scale production of proteins
   3. Organic synthesis
   4. Synthesis of optically pure drugs
   5. Antibiotics
   6. Polysaccharides and polyesters
   7. Food additives

C. Microbial Enzymes
   1. Production and application

D. Microbial-based foods and beverages
   1. Fermented foods
      a. Yogurt
      b. Cheese
      c. Sauerkraut
      d. Kimchi
      e. Chocolate
   2. Fermented beverages
      a. Beer
      b. Wine
      c. Distilled liquors

E. Plant-Microbe Interactions
   1. Protection of plants from frost
   2. Improvement of crop yields,
   3. *A. tumefaciens* in the production of transgenic plants
F. Microbes and Energy
   1. Biomass to fuels
      a. Ethanol
      b. Methane
   2. Bacterial batteries
G. Environmental Applications
   1. Biodegradation and bioremediation
   2. Sewage and wastewater treatment

VI. Suggested Texts

Glazer, A. N. & H. Nikaido. Microbial Biotechnology: Fundamentals of Applied Microbiology. 2nd ed. Cambridge University Press. 2007.

VII. Bibliography

Primary literature from journals such as: Applied and Environmental Microbiology, Applied Microbiology and Biotechnology, Jounral of Applied Microbiology

Farnworth, E. R. Handbook of Fermented Functional Foods. CRC Press. 2003.

Lee, B.H. Fundamentals of Food Biotechnology. VCH Publishers. 1996.

Maier, R. M. & I. L. Pepper & C. P. Gerba; Environmental Microbiology. Academic Press. 2000.

Saha, B. C. Fermentation Biotechnology. American Chemical Society. 2003.

Wackett, L. P. & C. D. Hershberger. Biocatalysis and Biodegradation: Microbial Transformation of Organic Compounds. ASM Press. 2001.

Waites, M. J. & N.L. Morgan & J. S. Rockey & G. Higton. Industrial Microbiology: An Introduction. Blackwell Science. 2001.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A453	N/A	4	(2+4)

6. Complete Course Title
Experiential Learning: Microbial Ecology
EL: Microbial Ecology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Theory and application of laboratory techniques in microbial ecology, diversity and evolution with an emphasis on experimental design, scientific writing and oral presentation skills.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A342 with minimum grade of C and [BIOL A450 or concurrent enrollment]

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The course prepares students for graduate school or careers in the environmental and/or microbial sciences. It is a companion laboratory-based course to BIOL A450 (Microbial Ecology).This change is part of our overall curriculum revision, which seeks to align our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science)

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A453
D. Number of Credits:	4
E. Contact Hours:	2+4
F. Course Title:	Experiential Learning: Microbial Ecology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
Course Description:	Theory and application of laboratory techniques in microbial ecology, diversity and evolution with an emphasis on experimental design, scientific writing and oral presentation skills
J. Course Prerequisites:	BIOL A342 with minimum grade of C and [BIOL A450 or concurrent enrollment]
K. Course Co-requisites:	N/A
L. Other Restrictions:	N/A
M. Registration Restrictions:	N/A
N. Course Fees:	Yes

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Guide students in selecting, comparing and interpreting scientific literature, synthesizing information and maintenance of a professional/field lab notebook.
2. Train and guide students in microbial ecology and microbial evolution laboratory techniques.
3. Support student-development of group projects to characterize microbial diversity and diversity changes in experimentally altered environments using culture and/or sequence based methods by facilitating discussion of research topics and providing guidance in experimental design, and data collection and analysis
4. Provide review and critical analysis of student proposals and guide students in student-to-student peer review.

A. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Perform and interpret laboratory techniques in microbial ecology.	Written assignments and examinations, projects
2. Develop an experimental research plan, including research aims, experimental design	Project work, group discussion and/or written assignments.

and data analysis	
3. Demonstrate competency in quantitative analysis and interpretation of scientific data in microbial ecology.	Written assignments, examinations and/or projects.
4. Communicate the results of scientific inquiry to an audience of scientific peers.	Oral Presentation, primary research paper, and/or written presentation materials.

IV. Course Level Justification

This experiential learning course is designed for Biological and Natural Science majors as a selective undergraduate course comparable to 400-level Microbial Ecology/Environmental Microbiology laboratory courses offered at other universities.

V. Topical Course Outline

A. Research Project Proposals
    1. Questions and Methods in Microbial Ecology
        a. Developing a project in Microbial Ecology and/or Microbial Evolution.
        b. Comparing different experimental systems in microbial ecology.
    2. Experimental Design
        a. Develop research aims.
        b. Develop hypothesis and experimental design.
        c. Generate and elaborate experimental protocols.

B. Experimentation – Microbial Ecology and Evolution
    1. Practical Skills
        a. Biological and Chemical Safety
        b. Examples of methods in community organism diversity
            1. Fluorescence *in-situ* hybridization
            2. Flow Cytometry
            3. 16S/23S/5S Pyrosequencing
        c. Examples of methods in genetic diversity
            1. Amplicon sequencing and community metabolic diversity
            2. Metabolic analysis
        d. Examples of methods in microcosms
            1. Microbial interactions
            2. Microbiology of the biomes
            3. Microbial evolution
    2. Data analysis
        a. Qualitative data analysis
        b. Quantitative data analysis
        c. Critical analysis and troubleshooting

C. Research communication
    1. In-lab journal article discussion/annotation
    2. In-lab biotechnology project discussion/presentation
    3. Primary research paper
        a. Peer Review
    4. Oral presentation to a scientific audience – In-class presentation

VI. Suggested Texts

Barton, L and Northup, D. Microbial Ecology. Wiley-Blackwell. 2011

Madigan, Martinko, Bender, Buckley and Stahl. Brock Biology of Microorganisms. 13th ed. Boston, MA. Benjamin Cummings. 2012.

Sanders E. and Miller J. I, Microbiologist: A Discovery based Course in Microbial Ecology and Molecular Evolution. ASM Press, Washington DC. 2009.

A selection of journal articles relavent to course content chosen from primary literature (Science, Nature, Journal of Bacteriology, Microbial Ecology, Cell, EMBO, PNAS, etc.).

VII. Bibliography

Journal Articles from primary literature (Science, Nature, Journal of Bacteriology, Microbial Ecology, Cell, EMBO, PNAS, etc.) relateed to student investigative projects.

Web-based resources for project development and data analysis, including (but not limited to) DNA sequence analysis (EZ-Taxon, NCBI BLAST toolkit, NCBI genomic data information), Microbial ID analysis tools (API online resources), image analysis platforms (Image J) and genomics.

Reference books related to student research topics and the identification and description of diverse microbial organisms, including but not limited to:

Bergey's Manual of Systematic Bacteriology. Volumes 1 through 5:

Volume 1: Vos, Garrity, Jones, Krieg, Ludwig, Rainey, Schleifer, and Whitman. Bergey's Manual of Systematic Bacteriology. Volume 3: The Firmicutes. Springer. 2009.

Volume 2: Garrity. Bergey's Manual of Systematic Bacteriology.Volume 2 : The Proteobacteria. Springer. 2005.

Volume 3: Volume 2: Garrity, Brenner, Krieg, and Staley. Bergey's Manual of Systematic Bacteriology. Volume 2: The Proteobacteria, Part B: The Gammaproteobacteria. Springer. 2005.

Volume 4: Krieg, Ludwig, Whitman, Hedlund, Paster, Staley, Ward, Brown, and Parte. Bergey's Manual of Systematic Bacteriology. Volume 4: The Bacteroidetes, Spirochaetes, Tenericutes (Mollicutes), Acidobacteria, Fibrobacteres, Fusobacteria, Dictyoglomi, Gemmatimonadetes, Lentisphaerae, Verrucomicrobia, Chlamydiae, and Planctomycetes. Springer. 2010.

Volume 5: Whitman, Goodfellow, Kämpfer, Busse, Trujillo, Ludwig, Suzuki, and Parte. Bergey's Manual of Systematic Bacteriology. Volume 5: The Actinobacteria. Springer. 2012.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A454	N/A	4	(2+4)

6. Complete Course Title
Experiential Learning: Microbial Biotechnology
EL: Microbial Biotechnology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Theory and application of laboratory techniques in microbial biotechnology, genetic engineering of microorganisms, and applied microbiology with an emphasis on experimental design, data collection and analysis and scientific writing and oral presentation skills.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A342 with minimum grade of C and [BIOL A451 or concurrent enrollment or Instructor Permission]

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The course prepares students for graduate school or careers in molecular biology, biotechnology and the microbial sciences. It is a companion laboratory-based course to BIOL A451 (Microbial Biotechnology).This change is part of our overall curriculum revision, which seeks to align our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science)

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A454
D. Number of Credits:	4
E. Contact Hours:	2+4
F. Course Title:	Experiential Learning: Applied Microbiology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	Theory and application of laboratory techniques in microbial biotechnology, genetic engineering of microorganisms, and applied microbiology with an emphasis on experimental design, data collection and analysis and scientific writing and oral presentation skills.
K. Course Prerequisites:	BIOL A342 with minimum grade of C and [BIOL A451 or concurrent enrollment or Instructor Permission]
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	Yes

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Guide student in selecting, comparing and interpreting scientific literature, synthesizing information and the maintenance of a professional lab notebook.
2. Train and guide students in techniques used in microbial biotechnology and applied microbiology.
3. Support the development of student-led group projects in microbial biotechnology and genetic engineering of microorganisms by facilitating discussion of research topics and providing guidance in experimental design, and data collection and analysis.
4. Provide review and critical analysis of student proposals and guide students in student-to-student peer review.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Develop an experimental research plan, including research aims, experimental design	Project work, group discussion and/or written Assignments.

data analysis.	
2. Demonstrate competency in molecular methods commonly used in biotechnology including (but not limited to) plasmid manipulation, recombinant DNA production, bacterial amplification and protein isolation and characterization.	Written assignments and/or projects.
3. Communicate the results of scientific inquiry to an audience of scientific peers.	Oral presentation, primary research paper, and/or written presentation materials.
4. Demonstrate competency in applied microbiology techniques, including (but not limited to) bioremediation, surfactant production, protein production in bacterial systems, generation of foods and beverages by microbial action.	Written assignments, laboratory exercises and group discussion.

IV. Course Level Justification

This experiential learning course is designed for Biological and Natural Sciences majors as a selective undergraduate course comparable to 400-level biotechnology/applied microbiology laboratory courses offered at other universities.

V. Topical Course Outline

A. Research Project Proposals
   1. Biotechnology questions methods
      a. Developing a project in recombinant DNA and bacterial expression.
      b. Comparing different model systems for production of recombinant proteins.
   2. Experimental Design
      a. Develop research aims.
      b. Develop hypothesis and experimental design.
      c. Generate and elaborate experimental protocols.

B. Experimentation – Biotechnology and recombinant DNA
   1. Examples of practical skills in applied microbiology
      a. Biological and Chemical Safety
      b. *In-vitro* Recombinant DNA techniques
      c. Generation of unique plasmids for the project aims.
      d. Model organism production of chosen protein
      e. Biological assays and molecular techniques
      f. Protein purification strategies and isolation methods.
   2. Data analysis
      a. Qualitative data analysis
      b. Quantitative data analysis
      c. Critical analysis and troubleshooting

C. Experimentation – Applied Microbiology
   1. Examples of practical skills in applied microbiology
      a. Biological assays and molecular techniques
      b. Methods in Microbial Disinfection
      c. Bioremediation
      d. Biosurfactant Production
      e. Production of fermented foods and beverages using microorganisms

f. Methods in wastewater treatment

2. Data analysis
   a. Qualitative data analysis
   b. Quantitative data analysis

D. Research communication
1. In-lab journal article discussion/annotation
2. In-lab biotechnology project discussion/presentation
3. Primary research paper
   a. Peer Review
4. Oral presentation to a scientific audience

VI. Suggested Texts

Demain A. Manual of Industrial Microbiology and Biotechnology. ASM Press, Washington, DC. 1999

Barker K. At the Bench: A Laboratory Navigator. CSHL Press, Woodbury, NY. 2005.

Madigan, Martinko, Bender, Buckley and Stahl. Brock Biology of Microorganisms. 13th ed. Boston, MA. Benjamin Cummings. 2012.

A selection of journal articles relavent to course content chosen from primary literature (Science, Nature, Journal of Bacteriology, Biotechnology, Cell, EMBO, PNAS, etc.).

VII. Bibliography

Journal Articles from primary literature (Science, Nature, Journal of Bacteriology, Microbial Ecology, Cell, EMBO, PNAS, etc.) relates to student investigative projects.

Web-based resources for project development and data analysis, including (but not limited to) DNA sequence analysis (NCBI BLAST toolkit, NCBI genomic data information) and image analysis platforms (Image J).

Reference books related to student research topics and the identification and description of diverse microbial organisms, including but not limited to:

Simpson T, Adams P, Golemis E. Basic Methods in Protein Purification and Analysis: A laboratory manual. CSHL Press, Woodbury, NY. 2009.

Green M and Sambrook J. Molecular Cloning. CSHL Press, Woodbury, NY. 2012.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A455	N/A	4	(2+4)

6. Complete Course Title
Experiential Learning: Bioinformatics
EL: Bioinformatics
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Computational theory and methods for analyses of biological phenomena. Applied laboratory for learning algorithms and databases used in sequence alignment, sequence searching, metagenomics, phylogenetics, analysis of next-generation sequencing data, protein structures, and molecular pathways. Genomics approaches for understanding complex biological systems in model organisms and human disease will be presented.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
{BIOL A252 and [MATH A200 or MATH A272] and [STAT A253 or STAT A307]} with minimum grade of C and one computer science course [CS A109, CS A110, CS A111, CSCE A201, or CSCE A202]

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course prepares students for graduate school or careers in molecular biology and microbiology. This change is part of our overall curriculum revision, which seeks to align our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science)

		☐ Approved ☐ Disapproved	
Initiator (faculty only) Khrys Duddleston Initiator (TYPE NAME)	Date	Dean/Director of School/College	Date
☐ Approved ☐ Disapproved	Department Chair	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair
	Date		Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair	☐ Approved ☐ Disapproved	Provost or Designee
	Date		Date

University of Alaska Anchorage
College of Health
Course Content Guide

I.	**Date of Initiation**	Spring 2014
II.	**Curriculum Action Request**	
	A. College:	College of Arts and Sciences
	B. Course Prefix:	BIOL
	C. Course Number:	A455
	D. Number of Credits:	4
	E. Contact Hours:	2+4
	F. Course Title:	Experiential Learning: Bioinformatics
	G. Grading Basis:	A-F
	H. Implementation Date:	Fall 2015
	I. Cross-listed/Stacked:	N/A
	J. Course Description:	Computational theory and methods for analyses of biological phenomena. Applied laboratory for learning algorithms and databases used in sequence alignment, sequence searching, metagenomics, phylogenetics, analysis of next-generation sequencing data, protein structures, and molecular pathways. Genomics approaches for understanding complex biological systems in model organisms and human disease will be presented.
	K. Course Prerequisites:	{BIOL A252, and [MATH A200 or MATH A272] and [STAT A253 or STAT A307]} with minimum grade of C and one computer science course [CS A109, CS A110, CS A111, CSCE A201, or CSCE A202]
	L. Course Co-requisites:	N/A
	M. Other Restrictions:	N/A
	N. Registration Restrictions:	N/A
	O. Course Fees:	Yes

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Present a synthesis of basic principles of mathematics, computer science, statistics and genetics used to develop algorithms for analyzing biological sequence data, including sequence alignment, sequence searching, metagenomics, phylogenetics, and next-generation sequencing data analysis.
2. Discuss how to implement and critically deconstruct computational methods to understand genomics data, molecular pathways, protein structures, and complex biological systems, with reference to model organisms and human disease.
3. Introduce databases and software for bioinformatics analyses, and explain how to implement sequence analyses programs using computer programming tools.
4. Facilitate student learning of current, prescient topics in bioinformatics by guided discussion of select scientific literature and recent biotechnological advancements that impact understanding of immune responses.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Integrate basic principles of mathematics, computer science, statistics and genetics to develop and apply algorithms for analyzing biological sequence data.	Written assignments, examinations, computational laboratory exercises, and bioinformatics laboratory reports.
2. Implement, interpret, and critically discuss computational methods to understand genomics data, metagenomics, protein structures, molecular pathways, and complex biological systems.	Written assignments, examinations, computational laboratory exercises, and bioinformatics laboratory reports.
3. Use software for bioinformatics analyses, and implement sequence analyses programs using computer programming tools.	Computational laboratory exercises, and bioinformatics laboratory reports.
4. Develop scientific communication skills by participating in class discussion and presenting bioinformatics laboratory reports.	Computational laboratory exercises, and bioinformatics laboratory reports.

IV. Course Level Justification

Experiential Learning: Bioinformatics is an advanced laboratory course synthesizing computational, mathematical, and statistical methods for analyzing and interpreting biological data, such as genetic sequences. As such, it requires in-depth preparation in genetics and quantitative sciences, including mathematics, statistics, and computer science, to understand, interpret, and implement algorithms for bioinformatics analyses; to access databases and learn bioinformatics software tools for biological data analysis; and to describe the implications of analyses for complex biological systems.

V. Topical Course Outline

A. Introduction to bioinformatics
    1. What is bioinformatics?
    2. Molecular basis of sequencing
        a. Nucleic acids
        b. Proteins
        c. Next-generation sequencing
    3. The genome revolution
        a. Genomics
        b. Functional genomics
        c. Metagenomics
    4. Computational resources for biologists
        a. Databases
        b. Algorithms
        c. Coding languages
        d. Introductory computational laboratory exercises

B. Theoretical bases of bioinformatics
    1. Search and sort algorithms for nucleic acid sequence analysis
        a. Pairwise alignment
        b. Multiple sequence alignment
    2. Protein sequence analysis algorithms

3. Phylogenetics algorithms
4. Probabilistic sequence analysis algorithms
    a. Bayesian
    b. Hidden Markov models
    c. Maximizing likelihood
    d. Sampling algorithms

C. Applications of bioinformatics algorithms for sequence analysis
1. Multiple sequence alignment
    a. BLAST variations
    b. Sequence alignment code
    c. Computational laboratory exercises
2. Building phylogenetic trees for understanding evolution
3. Next-generation sequencing
    a. Technological platforms
    b. Sequence data formats
    c. Gene and genome assembly
    d. Metagenomics of populations
    e. Computational laboratory exercises
4. Gene families
    a. Mapping gene duplication events
    b. Gene annotation
    c. Computational laboratory exercises
5. Whole genome sequence analysis
    a. Genome alignment algorithms
    b. Polymorphisms and ESTs
    c. Genome organization
    d. Inferring evolution from phylogeny
    e. Computational laboratory exercises

D. Applications of bioinformatics algorithms in molecular systems biology
1. Protein structure
    a. Protein Database
    b. De novo protein structure prediction algorithms
    c. Computational laboratory exercises
2. Functional genomics technologies used in systems biology
3. Functional genomics networks and data analysis
    a. Transcriptional networks
    b. Protein interaction networks
    c. Metabolomics networks
    d. Systems biology data types
    e. Clustering and principal component algorithms
    f. Computational exercises in genomics data analyses

E. From model organisms to human disease
1. Systems biology analysis of molecular pathways
    a. Genomics data sets
    b. Bioinformatics algorithms
    c. Computational exercises in systems biology
2. Systems biology of model organisms
3. Integrated genomics of human disease

VI. Suggested Texts

Pevsner, J. *Bioinformatics and Functional Genomics.* 2nd ed. Hoboken, NJ: Wiley-Blackwell. 2009.

Excerpts from primary literature and review articles from scientific journals, for example:
PLoS Computational Biology
PLoS One
Nucleic Acids Research

VII. Bibliography

Costa MJ, Galembeck E, Marson GA, Torres BB. A Quick Guide for Computer-Assisted Instruction in Computational Biology and Bioinformatics. *PLoS Comput Biol.* 2008 4(4): e1000035.

Gias, C., P. Jambeck. *Developing Bioinformatics Computer Skills.* Sebastopol, CA: O'Reilly Media. 2001.

Johnson M, Zaretskaya I, Raytselis Y, Merezhuk Y, McGinnis S, Madden TL. *NCBI BLAST: a better web interface. Nucleic Acids Res.* 2008 Jul 1;36:W5-9.

Jones, N.C., P.A. Pevsner. *An introduction to bioinformatics algorithms.* Cambridge, MA: MIT Press. 2004.

Klamt S, Haus U-U, Theis F. Hypergraphs and Cellular Networks. *PLoS Comput Biol.* 2009 5(5): e1000385.

Luo C, Tsementzi D, Kyrpides N, Read T, Konstantinidis KT. Direct comparisons of Illumina vs. Roche 454 sequencing technologies on the same microbial community DNA sample. *PLoS One.* 2012;7(2):e30087.

Mount, D. *Bioinformatics: Sequence and Genome Analysis.* 2nd ed. Cold Spring Harbor, NY: CSHL Press. 2004.

Mutz KO, Heilkenbrinker A, Lönne M, Walter JG, Stahl F. Transcriptome analysis using next-generation sequencing. *Curr Opin Biotechnol.* 2013 Feb;24(1):22-30.

Pop M, Salzberg SL. Bioinformatics challenges of new sequencing technology. *Trends Genet.* 2008 Mar;24(3):142-9.

Qi Y, Ge H. Modularity and Dynamics of Cellular Networks. *PLoS Comput Biol.* 2006 2(12): e174.

Searls DB. An Online Bioinformatics Curriculum. *PLoS Comput Biol.* 2012 8(9): e1002632.

Tisdall, J. *Beginning Perl for Bioinformatics.* Sebastopol, CA: O'Reilly Media. 2001.

Wood L, Gebhardt P. Bioinformatics Goes to School—New Avenues for Teaching Contemporary Biology. *PLoS Comput Biol.* 2013 9(6): e1003089.

Yook, K., T.W. Harris, *et al.* WormBase 2012: more genomes, more data, new website. *Nucl. Acids Res.* 2012 40 (D1): D735-D741.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A462	N/A	3	(3+0)

6. Complete Course Title
Virology
Virology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with BIOL A662

Signature Cross-Listed Coordination

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan2013
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan2013

14. General Education Requirement *Mark appropriate box:*
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Concepts in human virology, with an introduction to cell and molecular biology of virus structures, viral life cycles, interactions with host cells, immune responses and disease pathogenesis. Viral genomics, evolution, emergence, and advanced experimental methods for analyzing virus genome sequences will be discussed.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[BIOL A242 and BIOL A252] with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Changing pre-requisites to better reflect need for course.

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Health
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A462
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Virology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	BIOL A662
J. Course Description:	Concepts in human virology, with an introduction to cell and molecular biology of virus structures, viral life cycles, interactions with host cells, immune responses and disease pathogenesis. Viral genomics, evolution, emergence, and advanced experimental methods for analyzing virus genome sequences will be discussed.
K. Course Prerequisites:	[BIOL A242 and BIOL A252] with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Present a synthesis of concepts in modern virology, focused on molecular analyses of virus genomes, proteins, virion structures, virus-host interactions, viral life cycles, and experimental methods in virology.
2. Discuss how genetics, molecular and cell biology of virus replication facilitates understanding of pathogenesis of viral diseases in humans, including disease processes on the cellular level, immune responses, viral evasion of immunity, and the development of vaccines.
3. Conceptualize virus genomes and how they contribute to evolution and emergence of viruses, and facilitate student use of analytical and bioinformatics methods to understand virus genome sequences.
4. Facilitate student learning of current, prescient topics in virology by guided discussion of select scientific literature and recent biotechnological advancements that impact understanding of viruses.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Apply basic principles of cell biology, molecular biology, and genetics to describe virus genomes, structures, replication, gene expression, host cell interactions, and life cycles at molecular and cellular levels.	Written assignments, quizzes, and examinations
2. Analyze and critically discuss virus genes, virus genomes, virulence factors, immune responses to viruses, and pathogenesis of viral diseases in humans.	Written assignments, quizzes, and examinations
3. Synthesize biological concepts involved in virus emergence and evolution, and describe molecular methods for characterizing viral genomes and disease processes.	Written assignments, quizzes, and examinations
4. Develop scientific analytical skills by molecular analysis of virus genomes and protein structures, including bioinformatics approaches, and by analyzing select primary and secondary scientific literature.	Written assignments, research paper assignment, multimedia assignment, group discussion, and examinations

IV. Course Level Justification

This course is designed for Biological and Natural Sciences majors as an elective undergraduate course comparable to 400-level virology courses offered at other universities. This course requires students to synthesize concepts across disciplines.

V. Topical Course Outline

A. Introduction to virology
   1. Virology is an interdisciplinary study
   2. Virology is an experimental science
   3. Virology is the study of biological systems
B. Case study: group discussion on emergence of a novel virus
C. Integrated biological concepts needed in virology
   1. Genome organization
   2. Molecular biology of eukaryotic DNA replication
   3. Molecular biology of gene expression
   4. Eukaryotic cell cycle
   5. Compartmentalized subcellular structures
   6. Cellular signal transduction
   7. Protein structure and function
D. Virus life cycle
   1. Production of progeny virus
   2. Bacteriophage growth kinetics
   3. Experimental methods for measuring viruses during life cycle
E. Virus structures
   1. Virion structures, composition, and functional compartments

2. Electron microscopy methods for studying virion structures
3. Virion entry and egress
4. Structure and function of virion proteins
    a. Receptor-binding proteins
    b. Fusion proteins

F. Virus genomes and replication
1. Virus classification and families
2. RNA virus genomes and genes
3. DNA virus genomes and genes
4. Virus gene expression
5. Virus replication strategies
    a. Acute RNA virus infection
    b. Chronic DNA virus infection
    c. Retrovirus infection

G. Immune response to viruses
1. Innate immune response
2. Adaptive immune response
3. Viral evasion of innate and adaptive immune responses
4. Virus accessory genes in virulence
5. Molecular basis of vaccination

H. Pathogenesis of viral diseases
1. Acute respiratory infections
2. Hemorrhagic fever viruses
3. HIV/AIDS
4. Hepatitis viruses and cancer
5. DNA tumor viruses

I. Viral bioinformatics and genomics
1. Molecular basis of information flow in biological systems
2. Bioinformatics for virus sequence analysis
3. Genomics methods for virus sequencing
4. Systems biology of virus-host interactions

J. Emerging viruses
1. Ecology of outbreaks
2. Vector-borne viruses
3. Zoonoses – species jumping across the animal:human interface
4. Epidemiology of emerging infections

K. Current topics in virology
1. *This Week in Virology*
    1. Multimedia assignment
    2. Group discussion
2. Biosecurity of highly pathogenic viruses
3. Vaccines
    a. Antigenicity
    b. Efficacy
    c. Vaccination controversies
4. Antiviral drugs
    a. Mechanisms of action
    b. Drug resistance
5. Synthetic viruses in biotechnology

VI. Suggested Texts

Carter, J., V. Saunders. Virology: Principles and Applications. 2nd ed. Chichester, UK: Wiley & Sons; 2013.

Excerpts from primary literature and review articles from scientific journals, for example:
New England Journal of Medicine
Nature
The Lancet
PLoS Pathogens
mBio

VII. Bibliography

Barzon L, Lavezzo E, Militello V, Toppo S, Palù G. 2011. Applications of next-generation sequencing technologies to diagnostic virology. Int J Mol Sci. 12(11):7861-84.

Carter, J., V. Saunders. Virology: Principles and Applications. 2nd ed. Chichester, UK: Wiley & Sons; 2013.

Delwart E. 2013 A roadmap to the human virome. PLoS Pathog. 9(2):e1003146.

Drexler JF, Corman VM, Müller MA, Maganga GD, Vallo P, Binger T, Gloza-Rausch F, Rasche A, Yordanov S, Seebens A, Oppong S, Adu Sarkodie Y, Pongombo C, Lukashev AN, Schmidt-Chanasit J, Stöcker A, Carneiro AJ, Erbar S, Maisner A, Fronhoffs F, Buettner R, Kalko EK, Kruppa T, Franke CR, Kallies R, Yandoko ER, Herrler G, Reusken C, Hassanin A, Krüger DH, Matthee S, Ulrich RG, Leroy EM, Drosten C. 2012 Bats host major mammalian paramyxoviruses. Nat Commun. 24:3:796.

Fauci AS, Morens DM. 2012. The perpetual challenge of infectious diseases. N Engl J Med. 366(5):454-61.

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Ganley ML. 1998. The dispersal of the 1918 influenza virus on the Seward Peninsula, Alaska: an ethnohistoric reconstruction. Int J Circumpolar Health 57 S1:247-51.

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Schelhaas M. 2010. Come in and take your coat off - how host cells provide endocytosis for virus entry. Cell Microbiol. 12(10):1378-88.

Sharp PM, Hahn BH. Origins of HIV and the AIDS pandemic. Cold Spring Harb Perspect Med. 2011 Sep;1(1):a006841.

Taubenberger JK, Kash JC. 2011. Insights on influenza pathogenesis from the grave. Virus Res. 162 (1-2):2-7.

Tscherne DM, García-Sastre A. 2011. Virulence determinants of pandemic influenza viruses. J Clin Invest. 121(1):6-13.

van Boheemen S, de Graaf M, Lauber C, Bestebroer TM, Raj VS, Zaki AM, Osterhaus AD, Haagmans BL, Gorbalenya AE, Snijder EJ, Fouchier RA. 2012. Genomic characterization of a newly discovered coronavirus associated with acute respiratory distress syndrome in humans. mBio. 20:3(6).

Watanabe Y, Ibrahim MS, Suzuki Y, Ikuta K. 2012. The changing nature of avian influenza A virus (H5N1). Trends Microbiol. 20(1):11-20.

Weaver SC, Reisen WK. 2010. Present and future arboviral threats. Antiviral Res. 85(2):328-45.

Wenger JD, Castrodale LJ, Bruden DL, Keck JW, Zulz T, Bruce MG, Fearey DA, McLaughlin J, Hurlburt D, Hummel KB, Kitka S, Bentley S, Thomas TK, Singleton R, Redd JT, Layne L, Cheek JE, Hennessy TW. 2011. 2009. Pandemic influenza A H1N1 in Alaska: temporal and geographic characteristics of spread and increased risk of hospitalization among Alaska Native and Asian/Pacific Islander people. Clin Infect Dis. 52 Suppl 1:S189-97.

Wynne JW, Wang LF. 2013. Bats and viruses: friend or foe? PLoS Pathog. 9(10):e1003651.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A662	N/A	3	(3+0)

6. Complete Course Title
Advanced Virology
Advanced Virology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☒ Stacked with BIOL A462
Signature Cross-Listed Coordination

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Advanced concepts in human virology, an in-depth focus on cell and molecular biology of virus structures, viral life cycles, interactions with host cells, immune responses and disease pathogenesis. Viral genomics, evolution, emergence, and advanced experimental methods for analyzing virus genome sequences will be discussed.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☒ Level

16d. Registration Restriction(s) *(non-codable)*
Graduate Standing

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Update of CAR and CCG, change in pre-requisites

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Health
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A662
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Advanced Virology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	BIOL A462
J. Course Description:	Advanced concepts in human virology, an in-depth focus on cell and molecular biology of virus structures, viral life cycles, interactions with host cells, immune responses and disease pathogenesis. Viral genomics, evolution, emergence, and advanced experimental methods for analyzing virus genome sequences will be discussed.
K. Course Prerequisites:	N/A
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	Graduate Standing
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Present an integrated synthesis of concepts in modern virology, focused on molecular analyses of virus genomes, proteins, virion structures, virus-host interactions, viral life cycles, and experimental methods in virology.
2. Discuss how genetics, molecular and cell biology of virus replication is critical for understanding of pathogenesis of viral diseases in humans, including disease processes on the cellular level, immune responses, viral evasion of immunity, and the development of vaccines.
3. Conceptualize virus genomes and how they contribute to evolution and emergence of viruses, and facilitate student use of analytical and bioinformatics methods to understand virus genome sequences.
4. Facilitate student learning of current, prescient topics in virology by guided discussion of select scientific literature and recent biotechnological advancements that impact understanding of viruses.
5. Guide graduate student learning of advanced concepts from recent virology research modeled from the primary scientific literature.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Apply basic principles of cell biology, molecular biology, and genetics to describe virus genomes, structures, replication, gene expression, host cell interactions, and life cycles at molecular and cellular levels.	Written assignments, quizzes, and examinations
2. Analyze, summarize and critically discuss virus genes, virus genomes, virulence factors, immune responses to viruses, and pathogenesis of viral diseases in humans.	Written assignments, quizzes, and examinations
3. Synthesize biological concepts involved in virus emergence and evolution, and describe molecular methods for characterizing viral genomes and disease processes.	Written assignments, quizzes, and examinations
4. Develop scientific analytical skills by molecular analysis of virus genomes and protein structures, including bioinformatics approaches, and by analyzing select primary and secondary scientific literature.	Written assignments, research paper assignment, multimedia assignment, group discussion, and examinations
5. Integrate and model advanced concepts in virology derived from scientific literature, and develop hypotheses for new research.	Written assignments, research proposal, and literature discussions

IV. Course Level Justification

This course is an advanced interdisciplinary course comparable to graduate level virology courses offered at other universities. Students must synthesizes concepts from the scientific literature across disciplines.

V. Topical Course Outline

A. Introduction to virology
   1. Virology is an interdisciplinary study
   2. Virology is an experimental science
   3. Virology is the study of biological systems

B. Case study: group discussion on emergence of a novel virus

C. Integrated biological concepts needed in virology
   1. Genome organization
   2. Molecular biology of eukaryotic DNA replication
   3. Molecular biology of gene expression
   4. Eukaryotic cell cycle
   5. Compartmentalized subcellular structures
   6. Cellular signal transduction
   7. Protein structure and function

D. Virus life cycle
   1. Production of progeny virus
   2. Bacteriophage growth kinetics

3. Experimental methods for measuring viruses during life cycle

E. Virus structures
1. Virion structures, composition, and functional compartments
2. Electron microscopy methods for studying virion structures
3. Virion entry and egress
4. Structure and function of virion proteins
a. Receptor-binding proteins
b. Fusion proteins

F. Virus genomes and replication
1. Virus classification and families
2. RNA virus genomes and genes
3. DNA virus genomes and genes
4. Virus gene expression
5. Virus replication strategies
a. Acute RNA virus infection
b. Chronic DNA virus infection
c. Retrovirus infection

G. Immune response to viruses
1. Innate immune response
2. Adaptive immune response
3. Viral evasion of innate and adaptive immune responses
4. Virus accessory genes in virulence
5. Molecular basis of vaccination

H. Pathogenesis of viral diseases
1. Acute respiratory infections
2. Hemorrhagic fever viruses
3. HIV/AIDS
4. Hepatitis viruses and cancer
5. DNA tumor viruses

I. Viral bioinformatics and genomics
1. Molecular basis of information flow in biological systems
2. Bioinformatics for virus sequence analysis
3. Genomics methods for virus sequencing
4. Systems biology of virus-host interactions

J. Emerging viruses
1. Ecology of outbreaks
2. Vector-borne viruses
3. Zoonoses – species jumping across the animal:human interface
4. Epidemiology of emerging infections

K. Current topics in virology
1. *This Week in Virology*
a. Multimedia assignment
b. Group discussion
2. Biosecurity of highly pathogenic viruses
3. Vaccines
a. Antigenicity
b. Efficacy
c. Vaccination controversies
4. Antiviral drugs
a. Mechanisms of action
b. Drug resistance

5. Synthetic viruses in biotechnology

L. Graduate level synthesis and modeling of advanced concepts in virology
   1. Discussion of primary scientific literature
      a. Multimedia assignment
      b. Group discussion
      c. Graduate student journal article discussion
   2. Research proposal to address gap in knowledge in virology

VI. Suggested Texts

Carter, J., V. Saunders. Virology: Principles and Applications. 2nd ed. Chichester, UK: Wiley & Sons; 2013.

Flint, S.J., L.W. Enquist, V.R. Racaniello, A.M. Shalka. Principles of Virology: Molecular Biology, Pathogenesis, and Control of Animal Viruses. 2nd ed. ASM Press; 2003.

Readings from primary literature and review articles from scientific journals, for example:
New England Journal of Medicine
Nature
The Lancet
PLoS Pathogens
mBio
Science
Emerging Infectious Diseases

VII. Bibliography

Barzon L, Lavezzo E, Militello V, Toppo S, Palù G. 2011. Applications of next-generation sequencing technologies to diagnostic virology. Int J Mol Sci. 12(11):7861-84.

Carter, J., V. Saunders. Virology: Principles and Applications. 2nd ed. Chichester, UK: Wiley & Sons; 2013.

Delwart E. 2013 A roadmap to the human virome. PLoS Pathog. 9(2):e1003146.

Drexler JF, Corman VM, Müller MA, Maganga GD, Vallo P, Binger T, Gloza-Rausch F, Rasche A, Yordanov S, Seebens A, Oppong S, Adu Sarkodie Y, Pongombo C, Lukashev AN, Schmidt-Chanasit J, Stöcker A, Carneiro AJ, Erbar S, Maisner A, Fronhoffs F, Buettner R, Kalko EK, Kruppa T, Franke CR, Kallies R, Yandoko ER, Herrler G, Reusken C, Hassanin A, Krüger DH, Matthee S, Ulrich RG, Leroy EM, Drosten C. 2012 Bats host major mammalian paramyxoviruses. Nat Commun. 24:3:796.

Fauci AS, Morens DM. 2012. The perpetual challenge of infectious diseases. N Engl J Med. 366(5):454-61.

Fine P, Eames K, Heymann DL. 2011. "Herd immunity": a rough guide. Clin Infect Dis. 52(7):911-6. doi: 10.1093/cid/cir007.

Flint, S.J., L.W. Enquist, V.R. Racaniello, A.M. Shalka. Principles of Virology: Molecular Biology, Pathogenesis, and Control of Animal Viruses. 2nd ed. ASM Press; 2003.

Ganley ML. 1998. The dispersal of the 1918 influenza virus on the Seward Peninsula, Alaska: an ethnohistoric reconstruction. Int J Circumpolar Health 57 S1:247-51.

Gao R, Cao B, Hu Y, Feng Z, Wang D, Hu W, Chen J, Jie Z, Qiu H, Xu K, Xu X, Lu H, Zhu W, Gao Z, Xiang N, Shen Y, He Z, Gu Y, Zhang Z, Yang Y, Zhao X, Zhou L, Li X, Zou S, Zhang Y, Li X, Yang L, Guo J, Dong J, Li Q, Dong L, Zhu Y, Bai T, Wang S, Hao P, Yang W, Zhang Y, Han J, Yu H, Li D, Gao GF, Wu G, Wang Y, Yuan Z, Shu Y. 2013. Human infection with a novel avian-origin influenza A (H7N9) virus. N Engl J Med. 368(20):1888-97.

Korsman, S.N.J., G.Van Zyl, W. Preiser, L. Nutt, M.I. Andersson. Virology: an Illustrated Color Text. Churchill Livingstone Elsevier; 2012.

Schelhaas M. 2010. Come in and take your coat off - how host cells provide endocytosis for virus entry. Cell Microbiol. 12(10):1378-88.

Sharp PM, Hahn BH. Origins of HIV and the AIDS pandemic. Cold Spring Harb Perspect Med. 2011 Sep;1(1):a006841.

Taubenberger JK, Kash JC. 2011. Insights on influenza pathogenesis from the grave. Virus Res. 162 (1-2):2-7.

Tscherne DM, García-Sastre A. 2011. Virulence determinants of pandemic influenza viruses. J Clin Invest. 121(1):6-13.

van Boheemen S, de Graaf M, Lauber C, Bestebroer TM, Raj VS, Zaki AM, Osterhaus AD, Haagmans BL, Gorbalenya AE, Snijder EJ, Fouchier RA. 2012. Genomic characterization of a newly discovered coronavirus associated with acute respiratory distress syndrome in humans. mBio. 20:3(6).

Watanabe Y, Ibrahim MS, Suzuki Y, Ikuta K. 2012. The changing nature of avian influenza A virus (H5N1). Trends Microbiol. 20(1):11-20.

Weaver SC, Reisen WK. 2010. Present and future arboviral threats. Antiviral Res. 85(2):328-45.

Wenger JD, Castrodale LJ, Bruden DL, Keck JW, Zulz T, Bruce MG, Fearey DA, McLaughlin J, Hurlburt D, Hummel KB, Kitka S, Bentley S, Thomas TK, Singleton R, Redd JT, Layne L, Cheek JE, Hennessy TW. 2011. 2009. Pandemic influenza A H1N1 in Alaska: temporal and geographic characteristics of spread and increased risk of hospitalization among Alaska Native and Asian/Pacific Islander people. Clin Infect Dis. 52 Suppl 1:S189-97.

Wynne JW, Wang LF. 2013. Bats and viruses: friend or foe? PLoS Pat

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A463	N/A	3	(3+0)

6. Complete Course Title
Molecular Biology of Cancer
Molecular Biology of Cancer
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
A study of the molecular biology of cancer, with emphasis on the mechanisms by which a normal cell becomes a malignant cell, including the roles of chemicals, viruses, and other environmental insults in carcinogenesis. The orientation of the course will be toward a study of the fundamentals of cancer molecular biology and the current literature, through a combination of team-based learning (TBL), research, discussions, term papers, and seminars.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A252 with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
As part of our overall curriculum revision, which seeks to align our degree with the core concepts and competencies in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science), this course will become part of our rotation of upper division electives in molecular biology. This course has been offered at the graduate level (BIOL A663) and required graduate standing. Many students with a Natural Sciences or Biological Sciences major and an interest in the health care professions have expressed interest in this course as an elective for their B.S. or B.A. degree.

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College: College of Arts and Sciences
B. Course Prefix: BIOL
C. Course Number: A463
D. Number of Credits: 3
E. Contact Hours: 3+0
F. Course Title: Molecular Biology of Cancer
G. Grading Basis: A-F
H. Implementation Date: Fall 2015
I. Cross-listed/Stacked: N/A
J. Course Description: A study of the molecular biology of cancer, with emphasis on the mechanisms by which a normal cell becomes a malignant cell, including the roles of chemicals, viruses, and other environmental insults in carcinogenesis. The orientation of the course will be toward a study of the fundamentals of cancer molecular biology and the current literature, through a combination of team-based learning (TBL), research, discussions, term papers, and seminars.
K. Course Prerequisites: BIOL A252 with minimum grade of C.
L. Course Co-requisites: N/A
M. Other Restrictions: N/A
N. Registration Restrictions: N/A
O. Course Fees: No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:
1. Explain and provide a framework for understanding the fundamental changes in cell physiology that must occur for a cell to become cancerous.
2. Provide examples by which environmental insults promote carcinogenesis and discuss cancer prevention.
3. Discuss the latest research findings relevant to carcinogenesis and cancer treatment.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Illustrate the classes of molecular defects that must occur in the progression of carcinogenesis, as well as specific examples of these molecular defects, and to understand how the relevant molecular pathways interact.	TBL exercises, written assignments, in class discussions
2. Demonstrate the mechanisms by which genetic and environmental factors promote or	Written assignments, presentations, in class discussions

inhibit carcinogenesis.	
3. Analyze data presented in the primary literature on cancer molecular biology.	Presentations, in class discussions, written term paper

IV. Course Level Justification

This course teaches the complex topic of the molecular bases of cancer and is similar in expectation and scope to 400-level courses in molecular biology offered at other universitites.

V. Topical Course Outline

A. Biology of Cancer
B. Hallmarks of Cancer
C. Enabling Characteristics of Cancer
D. Growth Signaling and Oncogenes
E. Anti-Growth Signaling and Tumor Suppressors
F. Apoptosis
G. Tissue Invasion/Metastasis
H. Epigenetics and Cancer
I. Genome Stability and Cancer
    1. Genetics and Cancer Syndromes
    2. Carcinogens
J. Viruses and Cancer
K. Cancer and the Immune System

VI. Suggested Texts

Kleinsmith, L. J. Principles of Cancer Biology. Benjamin Cummings. 2005.

Weinberg R. A. The Biology of Cancer. 2nd ed. Taylor & Francis Group. 2013.

Primary literature from journals such as Oncogene, Science, Cell, Nature, and similar titles.

VII. Bibliography

Floor S.L., Dumont J.E., Maenhaut C., and Raspe E. (2012). Hallmarks of cancer: of all cancer cells, all the time? Trends Mol. Med. 18(9):509-15.

Hanahan D. and Weinberg R.A. (2011). Hallmarks of Cancer: the next generation. Cell 144(5):646-74.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A464	N/A	3	(3+0)

6. Complete Course Title
Metals in Biology
Metals in Biology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Investigation of the fundamental roles and actions of metals in biological systems. Major topics will include transition metals, catalysis of reactions, cellular and organismal homeostasis, evolutionary and ecological relevance, deficiency and toxicity. We will incorporate basic concepts of bioinorganic chemistry and structural biology.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[CHEM A106 and BIOL A242] with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☒ Level

16d. Registration Restriction(s) *(non-codable)*
Junior Standing

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course contributes to the development of a comprehensive discipline specific area in cell, genetics and molecular biology. Part of our overall curriculum revision, which seeks to streamline completion of the B.S. in Biological Sciences degree and align our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science)

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A464
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Metals in Biology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	Investigation of the fundamental roles and actions of metals in biological systems. Major topics will include transition metals, catalysis of reactions, cellular and organismal homeostasis, evolutionary and ecological relevance, deficiency and toxicity. We will incorporate basic concepts of bioinorganic chemistry and structural biology.
K. Course Prerequisites:	[CHEM A106 and BIOL A242] with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	Junior Standing
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Provide contemporary course content based in primary literature and key relevant reviews.
2. Build a conceptual framework for the fundamental roles of metals in biological systems.
3. Explain the concepts of essentiality vs. toxicity of metals in biological systems and strategies for how organisms have evolved to balance these opposing qualities.
4. Discuss current research in the field and relevant outstanding questions.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Summarize how metals are essential in biological systems and strategies for avoiding toxicity.	Written assignments and examinations
2. Illustrate potential metal toxicity mechanisms and current state-of-the-field knowledge in	Written assignments and examinations

selected areas.	
3. Deduce key metal-coordinating motifs in biological molecules.	Written assignments and examinations
4. Evaluate experimental data in primary literature and develop meaningful questions for future study.	Written assignments and examinations

IV. Course Level Justification

This course synthesizes critical roles of metal in maintenance of homeostasis in biological systems. The conceptual framework requires a working knowledge of basic cellular and molecular biology as well as integration of basic chemistry.

V. Topical Course Outline

A. Essential transition metals and theories of evolutionary history
B. Reading primary literature and basic experimental methods
C. Critical transition metals
    1. Iron
    2. Copper
    3. Zinc
D. Metal toxicity mechanisms
    1. Routes of exposure
    2. Movement in the environment
    3. Molecular responses
E. Metal analysis in biological materials
    1. ICP-MS
    2. X-Ray Fluorescence
    3. Chemical sensors
F. Human metabolic disorders
    1. Menkes Disease and Wilson's Disease
    2. Acrodermatitis enteropathica
    3. Hemochromatosis
    4. Friedreich's ataxia
G. Neurotoxicity and neurodegeneration
    1. Alzheimer's Disease
    2. Parkinson's and Manganism
    3. Mercury toxicity
H. Plants and metals
    1. Transport and homeostasis
    2. Herbivory defense
    3. Applications: Phytoremediation
I. Metals and nutrition
    1. Animal husbandry
    2. Human nutrition and metals
    3. Wildlife: exposure and deficiency

VI. Suggested Texts

Selected articles from the following journals:

Metallomics : integrated biometal science. Royal Society of Chemistry.

Journal of biological inorganic chemistry : JBIC : a publication of the Society of Biological Inorganic Chemistry.

The Journal of biological chemistry. American Society for Biochemistry and Molecular Biology.

BioMetals. Springer Publishing.

Biochemical and biophysical research communications. Elsevier Publishing.

VII. Bibliography

Bertini, I., Ed. Biological Inorganic Chemistry: Structure and Reactivity. University Science Books. 2007.

Jakob U, Reichmann D. Eds. Oxidative Stress and Redox Regulation. Springer Publishing. 2013

Nordberg, G.F., Fowler, B.A., Nordberg, M., Friberg, L.T. Eds. Handbook on the Toxicology of Metals (3rd Edition). Springer Publising. 2007

Sigel, A., Sigel, H., & Sigel, R. K. O. Metal Ions in Life Sciences Set. The Royal Society of Chemistry. 2013.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A465	A461L	4	(2+4)

6. Complete Course Title
Experiential Learning: Molecular Biology
EL: Molecular Biology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☒ Credits
- ☒ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☒ Course Number
- ☒ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with BIOL A665 _____ Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement *Mark appropriate box:*
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
A practical implementation of the theory learned in BIOL A465, which includes in vitro DNA techniques, gene expression analysis, and genomics. Students will also learn experimental design, proposal writing, and oral and written presentation skills.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A461 with minimum grade of C or concurrent enrollment

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Renumbering and renaming the course to comply with revision to BIOL undergraduate curriculum. Updating credits/contact hours to better reflect course content and student expectations. The course number, credits and description are being changed as part of an overall curriculum revision in which we are aligning our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Health
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A465
D. Number of Credits:	4
E. Contact Hours:	2+4
F. Course Title:	Experiential Learning: Molecular Biology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	BIOL A665
J. Course Description:	A practical implementation of the theory learned in BIOL A461, which includes in vitro DNA techniques, gene expression analysis, and genomics. Students will also learn experimental design, proposal writing, and oral and written presentation skills.
K. Course Prerequisites:	BIOL A461 with minimum grade of C or concurrent enrollment
L. Course Co-requisite:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
M. Course Fees	Yes

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Integrate the process of scientific investigation, including quantitative reasoning and analysis into the curriculum.
2. Provide instruction on practical and theoretical aspects of molecular biology and related fields.
3. Support the development of group projects aimed at investigating one or more biological phenomena using molecular approaches. This includes facilitating the discussion of research topics and the developments of research aims and experimental design. The instructor will provide review and critical analysis of student proposals in addition to the student-to-student peer review.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Develop an experimental research plan, including the elaboration of research aims and experimental strategies, and the evaluation of	Oral literature summary, written proposal, group discussion and peer review.

similar research proposals.	
2. Demonstrate competency in molecular laboratory technique including, in vitro DNA/RNA protein methods, genomics and gene expression analysis.	Laboratory exercises and group discussion.
3. Demonstrate skills in data analysis, including use of, quantitative reasoning, statistics and graphical analysis	Oral literature summary and research presentation, written proposal, group discussion and in laboratory exercises.
4. Communicate, to an audience of scientific peers, their project as primary scientific research.	Primary research report and oral presentation.

IV. Course Level Justification

Designed for Biological and Natural Sciences majors as a selective undergraduate course comparable to 400-level molecular biology laboratory courses offered at other universities.

V. Topical Course Outline

A. Research Project Proposals
    1. Choice of topic and experimental system
        a. Developing a research project from a topic of interest
B. Choosing an effective model organism or model system
    1. Experimental design
        a. Developing research aims
        b. Developing hypotheses and designing experiments to address them
        c. Elaborating experimental protocols
C. Experimentation
    1. Practical methodology
        a. Chemical safety
        b. Handling reagents and making solutions
        c. Biological media and organism care
        d. Biological assays and molecular techniques
        e. Data collection
    2. Data analysis
D. Qualitative data analysis
E. Quantitative data analysis
F. Critical analysis and troubleshooting
G. Research communication
    1. In-lab journal article presentation/discussion
    2. In-lab research project presentation/discussion
    3. Research Proposal
        a. Peer review
    4. Primary research manuscript
    5. Oral presentation to a scientific audience - In-class presentation
    6. Poster presentation

VI. Suggested Text(s)

Barker K. At the Bench: A Laboratory Navigator. CSHL Press, Woodbury, NY. 1998.

Gallagher SR, Wiley EA. Essential Laboratory Protocols. 2nd ed. John Wiley and sons, Hoboken, NJ. 2012.

VII. Bibliography:

Journal articles from the primary literature (Journal of Cell Science, Journal of Cell Biology, Journal of Biological Chemistry, Science, Nature, Cell and Molecular Biology, etc) related to student research projects.

Web-based resources for project development and data analysis, including genomic analysis (NCBI), image analysis (Image J) and model organism databases, such as www.yeastgenome.org; www.wormbase.org; and www.uniprot.org

Reference books related to student research topics and model systems, including:

Harris EH, Stern DB, Witman GB. The Chlamydomonas Sourcebook 2nd ed. Elsevier, Burlington, MA. 2008.

Strange K. *C. elegans* Methods and Applications. Humana Press, Totowa, NJ. 2006.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A665	A661L	4	(2+4)

6. Complete Course Title
Experiential Learning: Advanced Molecular Biology
EL: Adv. Mol. Biology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☒ Credits
- ☒ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☒ Course Number
- ☒ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with BIOL A465 _____ Cross-Listed Coordination
Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
A practical implementation of the theory learned in BIOL A661, which includes in vitro DNA techniques, gene expression analysis, and genomics. Students will also learn experimental design, proposal writing, and oral and written presentation skills, along with mentorship and leadership skills.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A661 with minimum grade of C or concurrent enrollment

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☒ Level

16d. Registration Restriction(s) *(non-codable)*
Graduate Standing

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The course number, credits and description are being changed to align with the BIOL A465, which was modified as part of an overall curriculum revision in which we are aligning our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Khrys Duddleston Initiator (TYPE NAME)	Date	☐ Approved ☐ Disapproved	Dean/Director of School/College — Date
☐ Approved ☐ Disapproved	Department Chair — Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair — Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair — Date	☐ Approved ☐ Disapproved	Provost or Designee — Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A665
D. Number of Credits:	4
E. Contact Hours:	2+4
F. Course Title:	Experiential Learning: Advanced Molecular Biology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2013
I. Cross-listed/Stacked:	BIOL A465
J. Course Description:	A practical implementation of the theory learned in BIOL A661, which includes in vitro DNA techniques, gene expression analysis, and genomics. Students will also learn experimental design, proposal writing, and oral and written presentation skills, along with mentorship and leadership skills.
K. Course Prerequisites:	BIOL A661 with minimum grade of C or concurrent enrollment
L. Course Co-requisite:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	Graduate Standing
M. Course Fees	Yes

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Integrate the process of scientific investigation, including quantitative reasoning and analysis into the curriculum.
2. Provide instruction on practical and theoretical aspects of molecular biology and related fields.
3. Support the development of group projects aimed at investigating one or more biological phenomena using molecular approaches. This includes facilitating the discussion of research topics and the developments of research aims and experimental design. The instructor will provide review and critical analysis of student proposals in addition to the student-to-student peer review.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Develop an experimental research plan, including the elaboration of research aims and experimental	Oral literature summary, written proposal, group discussion and peer review.

strategies, and the evaluation of similar research proposals.	
1. Demonstrate competency in molecular laboratory technique including, in vitro DNA/RNA protein methods, genomics and gene expression analysis.	Laboratory exercises and group discussion.
2. Lead a small research team by coordinating group activity, maintaining communication and coordination of group efforts in written work and oral presentation	Laboratory exercises, primary research, written proposals, oral presentation and group discussion.
3. Demonstrate skills in data analysis, including use of, quantitative reasoning, statistics and graphical analysis	Oral literature summary and research presentation, written proposal, group discussion and in laboratory exercises.
4. Communicate, to an audience of scientific peers, their project as primary scientific research.	Primary research report and oral presentation.

IV. Course Level Justification

Designed for graduate students in the biological sciences as an elective graduate course comparable to 600-level molecular biology laboratory courses offered at other universities.

V. Topical Course Outline

A. Research Project Proposals
B. Choice of topic and experimental system
    1. Developing a research project from a topic of interest
    2. Choosing an effective model organism or model system
C. Experimental design
    1. Developing research aims
    2. Developing hypotheses and designing experiments to address them
    3. Elaborating experimental protocols
D. Experimentation
E. Practical methodology
    1. Chemical safety
    2. Handling reagents and making solutions
    3. Biological media and organism care
    4. Biological assays and molecular techniques
    5. Data collection
F. Data analysis
    1. Qualitative data analysis
    2. Quantitative data analysis
    3. Critical analysis and troubleshooting
G. Research communication
H. In-lab journal article presentation/discussion
I. In-lab research project presentation/discussion
J. Research Proposal
    1. Peer review

K. Primary research manuscript
L. Oral presentation to a scientific audience - In-class presentation
M. Poster presentation
N. Mentorship
    1. Lead group efforts in laboratory exercises
    2. Organize and edit a research proposal
    3. Organize and lead group presentations

VI. Suggested Text(s)

Barker K. At the Bench: A Laboratory Navigator. CSHL Press, Woodbury, NY. 1998.

Gallagher SR, Wiley EA. Essential Laboratory Protocols. 2nd ed. John Wiley and sons, Hoboken, NJ. 2012.

VII. Bibliography

Journal articles from the primary literature (Science, Nature, Cell, EMBO J, Cell and Molecular Biology, etc) related to student research projects.

Web-based resources for project development and data analysis, including genomic analysis (NCBI and model organism databases), microarray and image analysis platforms (Image J and MAGIC Tool), and DNA sequence analysis.

Reference books related to student research topics and model systems, including:

Ashburner M, Golic K, Hawley S. Drosophila: a laboratory handbook. CSHL Press, Woodbury, NY. 2004.

Simpson R, Adams P, Golemis E. Basic Methods in Protein Purification and Analysis: A Laboratory Manual. CSHL Press, Woodbury, NY. 2009.

Strange K. *C. elegans* Methods and Applications. Humana Press, Totowa, NJ. 2006.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A471	N/A	3	(3+0)

6. Complete Course Title
Immunology
Immunology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☒ Credits
- ☒ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☐ Course Number
- ☒ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☒ Cross Listed with CHEM A471
☐ Stacked with _____ Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Fundamental concepts of immunology, including cells and tissues of the immune system, innate immunity, lymphocyte development, antigenicity, cytokine signaling, antibody responses, immunotherapies and vaccines. Comparative immunological evolution of non-human species will be discussed. Immunological aspects of human disease, with particular emphasis on host-pathogen interactions, autoimmune diseases, immunodeficiencies, and cancer.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[BIOL A242 and BIOL A252] with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
We are removing laboratory from course, revising name and content.

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Health
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A471
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Immunology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	CHEM A471
J. Course Description:	Fundamental concepts of immunology, including cells and tissues of the immune system, innate immunity, lymphocyte development, antigenicity, cytokine signaling, antibody responses, immunotherapies and vaccines. Comparative immunological evolution of non-human species will be discussed. Immunological aspects of human disease, with particular emphasis on host-pathogen interactions, autoimmune diseases, immunodeficiencies, and cancer.
K. Course Prerequisites:	[BIOL A242 and BIOL A252] with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Present a synthesis of concepts in immunology, focused on cells and tissues of the immune system, innate immunity, innate immune effectors and antigen-presenting cells, lymphocyte development, the molecular bases of antigenicity and vaccines, and cytotoxic T-cell and antibody responses.
2. Discuss how experimental methods using non-human species (mice, primates, rabbits, birds, and model organisms) have contributed important concepts to immunology.
3. Conceptualize host-pathogen immune interactions, with case studies drawn from the literature, to include tuberculosis, HIV/AIDS, malaria, tumor viruses, and influenza, and the roles of the immune system in autoimmune diseases, immunodeficiencies, and cancer.
4. Facilitate student learning of current, prescient topics in virology by guided discussion of select scientific literature and recent biotechnological advancements that impact understanding of immune responses.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Apply basic principles of genetics, cell biology, molecular biology, and physiology to describe the development of both innate and adaptive immune responses with a particular emphasis on the human immune system.	Written assignments and examinations
2. Analyze and critically discuss advanced experimental methods, comparative animal models to understand immune system evolution, host-pathogen interactions, and vaccines.	Written assignments and examinations
3. Synthesize and evaluate the role of the immune system in chronic diseases, including automimmune diseases, immunodeficiencies, and cancer.	Written assignments and examinations
4. Develop scientific communication skills by participating in class discussion and presenting an immunological case study.	Written assignments, research paper, and case study presentation

IV. Course Level Justification

Immunology is an interdisciplinary science, requiring in-depth preparation in genetics and cell biology, to understand novel immunological concepts presented and experimental animal models for immunological research. Immunology requires prerequisites in cell biology and genetics.

V. Topical Course Outline

A. Introduction to immunology
   1. Self vs. non-self
   2. Cells and tissues of immune system
   3. Experimental methods in immunology
   4. Comparative immunology in animal models

B. Integrated biological concepts at work in the immune system
   1. Immune subcellular structure and function
   2. Immune cell DNA replication and cell cycle
   3. Immunological gene expression
   4. Immunological signal transduction
   5. Immune cell development
   6. Immune cell physiology
   7. Immune cell protein structure and function
   8. Evolution of immune system

C. Innate immune system
   1. Pattern recognition receptors (PRR)
   2. Innate signal transduction
   3. Innate immune responses in the cell

4. Innate immune effector cell responses
5. Intrinsic immune responses
6. Complement and defensins
7. Evolution of innate immune system
    a. Mammals
    b. Model organisms

D. Innate immune effector cells
1. Macrophages
2. Neutrophils
3. Natural killer T cells
4. Specialized innate effector cells
5. Innate immune killing mechanisms in infection
    a. Bacteria
    b. Viruses
    c. Eukaryotic parasites
    d. Superantigens in autoimmunity

E. Innate immune cells in antigen presentation
1. Molecular pathways of antigen presentation
    a. MHC I
    b. MHC II
    c. Cross-presentation
2. Antigen repertoire
3. Innate responses in somatic cells
4. Specialized antigen-presenting cells
5. Molecular structure and function of antigen presentation proteins

F. Adaptive immune responses
1. Hematopoetic cell development
2. Myeloid lineages
3. Lymphoid lineages
4. Generation of lymphoid cell responses
    a. Differential TH responses
    b. Cytotoxic T cells
    c. Helper T cells
    d. B cells
    e. Plasma cells
5. Immune memory
6. Vaccination
7. Antibody responses
    a. Immunogloblulin isotype structures
    b. Thymic selection theory
    c. Generation of genomic antibody diversity
    d. Somatic hypermutation

G. Emerging paradigms in immunology from experimental model organisms
1. Comparative immunological evolution
2. Transgenic mouse models of innate immunity
3. Mouse models of adaptive immunity

H. Pathogen evasion of immune responses
1. Primer on host-pathogen interactions
2. Evasion of innate immunity
3. Evasion of adaptive immunity
4. HIV/AIDS

5. DNA tumor viruses
6. Tuberculosis
7. Malaria

I. Immunology and human disease
1. Autoimmune diseases
2. Immunodeficiencies
3. Aging and immune responses
4. Immune aspect of malignancies (cancer)
5. Immunological diseases of unknown etiology
6. Antigen selection for vaccine design
7. Immunotherapies

VI. Suggested Texts

Abbas, A.K., A.H. Lichtman, S. Pillai. Cellular and Molecular Immunology, 7th ed. Philadelphia, PA: Elsevier Health Sciences. 2011.

Excerpts from primary literature and review articles from scientific journals, for example:
Immunity
FASEB Journal
Current Opinion in Immunology
Nature Reviews Immunology
Immunological Reviews

VII. Bibliography

Abe M, Hiasa Y, Onji M. T Helper 17 Cells in Autoimmune Liver Diseases. 2013. Clin Dev Immunol. 2013:607073.

Frasca D, Blomberg BB. 2011. Aging impairs murine B cell differentiation and function in primary and secondary lymphoid tissues. Aging Dis. 2(5):361-73.

Ganesh K, Neuberger MS. 2011. The relationship between hypothesis and experiment in unveiling the mechanisms of antibody gene diversification. FASEB J. 25(4):1123-32.

Giltiay NV, Chappell CP, Clark EA. 2012. B-cell selection and the development of autoantibodies. Arthritis Res Ther. Suppl 4:S1.

Hamilton CE, Papavasiliou FN, Rosenberg BR. 2010. Diverse functions for DNA and RNA editing in the immune system. RNA Biol. 7(2):220-8.

Hsu E. 2011. The invention of lymphocytes. Curr Opin Immunol. 23(2):156-62.

Iwasaki A, Medzhitov R. 2010. Regulation of adaptive immunity by the innate immune system. Science. 327(5963):291-5.

Kiefer K, Oropallo MA, Cancro MP, Marshak-Rothstein A. 2012. Role of type I interferons in the activation of autoreactive B cells. Immunol Cell Biol. 90(5):498-504.

Kunert A, Straetemans T, Govers C, Lamers C, Mathijssen R, Sleijfer S, Debets R. 2013. TCR-Engineered T Cells Meet New Challenges to Treat Solid Tumors: Choice of Antigen, T Cell Fitness, and Sensitization of Tumor Milieu. Front Immunol. 4:363.

Murphy, K. Janeway's Immunobiology. 8th ed. New York, NY: Garland Science; 2012.

Owen, J., J. Punt. S. Stranford. Kuby Immunology. 7th ed. New York, NY: W.H. Freeman; 2013.

Packard TA, Cambier JC. 2013. B lymphocyte antigen receptor signaling: initiation, amplification, and regulation. F1000Prime Rep. 5:40.

Sallusto F, Lanzavecchia A, Araki K, Ahmed R. 2010. From vaccines to memory and back. Immunity. 33(4):451-63.

Xu Z, Zan H, Pone EJ, Mai T, Casali P. 2012. Immunoglobulin class-switch DNA recombination: induction, targeting and beyond. Nat Rev Immunol. 12(7):517-31.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Chemistry

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
CHEM	A471	N/A	3	(3+0)

6. Complete Course Title
Immunology
Immunology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☒ Credits
- ☒ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☐ Course Number
- ☒ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☒ Cross Listed with BIOL A471
☐ Stacked with _____ Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston/Colin McGill Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Fundamental concepts of immunology, including cells and tissues of the immune system, innate immunity, lymphocyte development, antigenicity, cytokine signaling, antibody responses, immunotherapies and vaccines. Comparative immunological evolution of non-human species will be discussed. Immunological aspects of human disease, with particular emphasis on host-pathogen interactions, autoimmune diseases, immunodeficiencies, and cancer.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[BIOL A242 and BIOL A252] with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*
N/A

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
N/A

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
We are removing laboratory from course, revising name and content.

Initiator (faculty only) Date
Khrys Duddleston/Colin McGill
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Health
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	CHEM
C. Course Number:	A471
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Immunology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	BIOL A471
J. Course Description:	Fundamental concepts of immunology, including cells and tissues of the immune system, innate immunity, lymphocyte development, antigenicity, cytokine signaling, antibody responses, immunotherapies and vaccines. Comparative immunological evolution of non-human species will be discussed. Immunological aspects of human disease, with particular emphasis on host-pathogen interactions, autoimmune diseases, immunodeficiencies, and cancer.
K. Course Prerequisites:	[BIOL A242 and BIOL A252] with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Present a synthesis of concepts in immunology, focused on cells and tissues of the immune system, innate immunity, innate immune effectors and antigen-presenting cells, lymphocyte development, the molecular bases of antigenicity and vaccines, and cytotoxic T-cell and antibody responses.
2. Discuss how experimental methods using non-human species (mice, primates, rabbits, birds, and model organisms) have contributed important concepts to immunology.
3. Conceptualize host-pathogen immune interactions, with case studies drawn from the literature, to include tuberculosis, HIV/AIDS, malaria, tumor viruses, and influenza, and the roles of the immune system in autoimmune diseases, immunodeficiencies, and cancer.
4. Facilitate student learning of current, prescient topics in virology by guided discussion of select scientific literature and recent biotechnological advancements that impact understanding of immune responses.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Apply basic principles of genetics, cell biology, molecular biology, and physiology to describe the development of both innate and adaptive immune responses with a particular emphasis on the human immune system.	Written assignments and examinations
2. Analyze and critically discuss advanced experimental methods, comparative animal models to understand immune system evolution, host-pathogen interactions, and vaccines.	Written assignments and examinations
3. Synthesize and evaluate the role of the immune system in chronic diseases, including automimmune diseases, immunodeficiencies, and cancer.	Written assignments and examinations
4. Develop scientific communication skills by participating in class discussion and presenting an immunological case study.	Written assignments, research paper, and case study presentation

IV. Course Level Justification

Immunology is an interdisciplinary science, requiring in-depth preparation in genetics and cell biology, to understand novel immunological concepts presented and experimental animal models for immunological research. Immunology requires prerequisites in cell biology and genetics.

V. Topical Course Outline

A. Introduction to immunology
   1. Self vs. non-self
   2. Cells and tissues of immune system
   3. Experimental methods in immunology
   4. Comparative immunology in animal models

B. Integrated biological concepts at work in the immune system
   1. Immune subcellular structure and function
   2. Immune cell DNA replication and cell cycle
   3. Immunological gene expression
   4. Immunological signal transduction
   5. Immune cell development
   6. Immune cell physiology
   7. Immune cell protein structure and function
   8. Evolution of immune system

C. Innate immune system
   1. Pattern recognition receptors (PRR)
   2. Innate signal transduction
   3. Innate immune responses in the cell

4. Innate immune effector cell responses
5. Intrinsic immune responses
6. Complement and defensins
7. Evolution of innate immune system
    a. Mammals
    b. Model organisms

D. Innate immune effector cells
1. Macrophages
2. Neutrophils
3. Natural killer T cells
4. Specialized innate effector cells
5. Innate immune killing mechanisms in infection
    a. Bacteria
    b. Viruses
    c. Eukaryotic parasites
    d. Superantigens in autoimmunity

E. Innate immune cells in antigen presentation
1. Molecular pathways of antigen presentation
    a. MHC I
    b. MHC II
    c. Cross-presentation
2. Antigen repertoire
3. Innate responses in somatic cells
4. Specialized antigen-presenting cells
5. Molecular structure and function of antigen presentation proteins

F. Adaptive immune responses
1. Hematopoetic cell development
2. Myeloid lineages
3. Lymphoid lineages
4. Generation of lymphoid cell responses
    a. Differential TH responses
    b. Cytotoxic T cells
    c. Helper T cells
    d. B cells
    e. Plasma cells
5. Immune memory
6. Vaccination
7. Antibody responses
    a. Immunogloblulin isotype structures
    b. Thymic selection theory
    c. Generation of genomic antibody diversity
    d. Somatic hypermutation

G. Emerging paradigms in immunology from experimental model organisms
1. Comparative immunological evolution
2. Transgenic mouse models of innate immunity
3. Mouse models of adaptive immunity

H. Pathogen evasion of immune responses
1. Primer on host-pathogen interactions
2. Evasion of innate immunity
3. Evasion of adaptive immunity
4. HIV/AIDS

5. DNA tumor viruses
6. Tuberculosis
7. Malaria

I. Immunology and human disease
1. Autoimmune diseases
2. Immunodeficiencies
3. Aging and immune responses
4. Immune aspect of malignancies (cancer)
5. Immunological diseases of unknown etiology
6. Antigen selection for vaccine design
7. Immunotherapies

VI. Suggested Texts

Abbas, A.K., A.H. Lichtman, S. Pillai. Cellular and Molecular Immunology, 7th ed. Philadelphia, PA: Elsevier Health Sciences. 2011.

Excerpts from primary literature and review articles from scientific journals, for example:
Immunity
FASEB Journal
Current Opinion in Immunology
Nature Reviews Immunology
Immunological Reviews

VII. Bibliography

Abe M, Hiasa Y, Onji M. T Helper 17 Cells in Autoimmune Liver Diseases. 2013. Clin Dev Immunol. 2013:607073.

Frasca D, Blomberg BB. 2011. Aging impairs murine B cell differentiation and function in primary and secondary lymphoid tissues. Aging Dis. 2(5):361-73.

Ganesh K, Neuberger MS. 2011. The relationship between hypothesis and experiment in unveiling the mechanisms of antibody gene diversification. FASEB J. 25(4):1123-32.

Giltiay NV, Chappell CP, Clark EA. 2012. B-cell selection and the development of autoantibodies. Arthritis Res Ther. Suppl 4:S1.

Hamilton CE, Papavasiliou FN, Rosenberg BR. 2010. Diverse functions for DNA and RNA editing in the immune system. RNA Biol. 7(2):220-8.

Hsu E. 2011. The invention of lymphocytes. Curr Opin Immunol. 23(2):156-62.

Iwasaki A, Medzhitov R. 2010. Regulation of adaptive immunity by the innate immune system. Science. 327(5963):291-5.

Kiefer K, Oropallo MA, Cancro MP, Marshak-Rothstein A. 2012. Role of type I interferons in the activation of autoreactive B cells. Immunol Cell Biol. 90(5):498-504.

Kunert A, Straetemans T, Govers C, Lamers C, Mathijssen R, Sleijfer S, Debets R. 2013. TCR-Engineered T Cells Meet New Challenges to Treat Solid Tumors: Choice of Antigen, T Cell Fitness, and Sensitization of Tumor Milieu. Front Immunol. 4:363.

Murphy, K. Janeway's Immunobiology. 8th ed. New York, NY: Garland Science; 2012.

Owen, J., J. Punt. S. Stranford. Kuby Immunology. 7th ed. New York, NY: W.H. Freeman; 2013.

Packard TA, Cambier JC. 2013. B lymphocyte antigen receptor signaling: initiation, amplification, and regulation. F1000Prime Rep. 5:40.

Sallusto F, Lanzavecchia A, Araki K, Ahmed R. 2010. From vaccines to memory and back. Immunity. 33(4):451-63.

Xu Z, Zan H, Pone EJ, Mai T, Casali P. 2012. Immunoglobulin class-switch DNA recombination: induction, targeting and beyond. Nat Rev Immunol. 12(7):517-31.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A472	A309	3	(3+0)

6. Complete Course Title
Biogeography
Biogeography
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☒ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Environment and Society, BA	6Jan14	Dorn VanDommelen, dvandommelen@uaa.alaska.edu
2. Environment and Society, BS	6Jan14	Dorn VanDommelen, dvandommelen@uaa.alaska.edu
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Ecological basis and historical patterns of the distribution of organisms and ecosystems on a worldwide basis. Current theories regarding the origin of these distributions are examined.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A288 with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The course number is being changed to be consistent with the level at which the course has been taught, and so that graduate students can take the course for credit. Also, this is part of our overall curriculum revision, which seeks to streamline completion of the B.S. in Biological Sciences degree and align our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A472
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Biogeography
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	Ecological basis and historical patterns of the distribution of organisms and ecosystems on a worldwide basis. Current theories regarding the origin of these distributions are examined
K. Course Prerequisites:	BIOL A288 with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Elucidate processes leading to the global distribution of biomes, ecosystems and the effects of ecological scaling from the global to the micro-topography level.
2. Provide the tools for assessing biogeographic patterns and environmental degradation in the context of geomorphological, geological and ecological processes.
3. Guide students to analyze biogeographic patterns and habitat degradation through the formulation and testing of hypotheses.
4. Reinforce the application of the scientific method for independent research projects designed to understand biogeographic principles, including the collection and interpretation of data, modification of study designs, and writing of an original scientific paper.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Describe the fundamental concepts of biogeographic patterns ranging from global to micro-geographic scales based on climate, plate tectonics, oceanic and atmospheric circulation, and other major processes.	Examinations, independent research project and research paper.
2. Demonstrate and apply knowledge of biogeography to describe integrative	Examinations, independent research project and research paper.

associations between the distribution and evolution of various taxa and their environmental adaptations.	
3. Interpret and assess environmental degradation through biogeographic distribution patterns and human land use including the application of island biogeographic theory to the design of nature reserves.	Examinations.
4. Formulate and test hypotheses; collect, statistically analyze and interpret data from a research project that culminates in a standard scientific manuscript.	Independent research project and research paper.

IV. Course Level Justification

Designed for Biology and Natural Sciences majors as an elective undergraduate course comparable to 400-level biogeography courses offered at other universities.

V. Topical Course Outline

A. Endemism, dispersal and variance
B. Species distributions
C. Community distributions
D. Speciation and diversification
E. History of life
    1. Diversification of life
    2. Mass extinction events
    3. Patterns from the Pleistocene
F. Provincialism and disjunction
G. Phylogenetic analyses
H. Island biogeography and the design of nature reserves
    1. Case studies
    2. GIS applications
I. Latitudinal gradients in biodiversity
J. Interchange and barriers
K. Disturbance ecology
L. Human biogeography
M. Biomes
    1. Terrestrial systems
        a. Deserts
        b. Tropical rainforests
        c. Temperate forests
        d. Treelines and boundaries
        e. Arctic tundra
    2. Marine systems
        a. Oceanography, productivity and climate change
        b. Coral reefs
        c. Mangrove forests
    3. Freshwater systems
        a. Wetland conservation and mitigation
        b. The river continuum concept

VI. Suggested Texts

Lomolino, M.V., Riddle, B.R., Whittaker, R.J. & Brown, J.*H. Biogeography 4E. Sinauer* Associates, Inc. 2010.

VII. Bibliography

The classic papers found in Foundations of Biogeography: Classic Papers with Commentaries, edited by Lomolino, Sax & Brown (2004), formed the basis of the field of biogeography.

The “Journal of Biogeography”, published by Blackwell Publishing, along with the sister journals "Global Ecology and Biogeography" and "Diversity and Distributions" contain many thousands of articles that extend those classic ideas using modern techniques and technologies.

The book Macroecology, by Brown, J.H. (1995, University of Chicago Press), provides an excellent integration of biogeography with other biological specialties, such as phylogenetics.

The book Geographic Variation, Speciation, and Clines, by Endler, J. (1977, Princeton University Press), is a classic treatment of the relationship between geographic patterns and biological diversification.

The book The Theory of Island Biogeography, by MacArthur, R.H. & Wilson, E.O. (1967, Princeton University Press), is the classic analysis of island biogeography theory.

Harrison, S. 2007. Merging evolutionary and ecological approaches to understanding geographic gradients in species richness. American Naturalist 170 (Supplement).

Hayek, L.C. & Buzas, M.A. 1997. Surveying Natural Populations. Columbia University Press.

Pielou, E.C. 1991. After the Ice Age. The Return of Life to Glaciated North America. University of Chicago Press.

Travis, J. 1996. Ecology and evolution of geographical variation in species interaction. American Naturalist 148 (Supplement).

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A473	A373	3	(3+0)

6. Complete Course Title
Conservation Biology
Conservation Biology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Other Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☒ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Environment and Society, BA	6Jan14	Dorn VanDommelen, dvandommelen@uaa.alaska.edu
2. Environment and Society, BS	6Jan14	Dorn VanDommelen, dvandommelen@uaa.alaska.edu
3. Environment and Society, Minor, Environmental Scienc	6Jan14	Dorn VanDommelen, dvandommelen@uaa.alaska.edu

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
- ☐ Oral Communication
- ☐ Written Communication
- ☐ Quantitative Skills
- ☐ Humanities
- ☐ Fine Arts
- ☐ Social Sciences
- ☐ Natural Sciences
- ☒ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Review of the human drivers of global environmental change (human population growth and consumption of resources), the consequences of environmental degradation, and application of tools to address environmental change.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[BIOL A271 or ENVI A211] with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Other Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Completion of all GER Tier 1 courses is required

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The course number is being changed to be consistent with the level at which the course has been taught, and so that graduate students can take the course for credit. Also, this is part of our overall curriculum revision, which seeks to streamline completion of the B.S. in Biological Sciences degree and align our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A473
D. Number of Credits:	3.0
E. Contact Hours:	3+0
F. Course Title:	Conservation Biology
G. Grading Basis:	A-F
H. Implementation Date:	Spring 2014
I. Cross-listed/Stacked:	N/A
J. Course Description:	Review of the human drivers of global environmental change (human population growth and consumption of resources), the consequences of environmental degradation, and application of tools to address environmental change.
K. Course Prerequisites:	[BIOL A271 or ENVI A211] with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	Completion of all GER Tier 1 courses is required
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Guide students in understanding the roles of habitat preservation, population integrity, and application of conservation policy to maintain natural ecosystems and biota.
2. Teach students to analyze conservation problems in a multidisciplinary manner with considerations of economics, law, policy and biological principles.
3. Teach students to assess environmental degradation using standardized protocols and modern instruments, and analyze resulting data.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes	Assessment Procedures
1. Explain the drivers and consequences of environmental problems	Case studies, analysis of hypotheticals, examinations
2. Report and interpret major environmental problems	Examinations
3. Explain how problems interact in synergism	Examinations
4. Explain and apply tools for solving	Project Report

environmental problems	

IV. Course Level Justification

Students are required to learn and integrate information from a variety of scientific disciplines; to read, to understand, and to apply ideas conveyed by primary scientific literature; to synthesize chemical, geological, ecological and biological knowledge and social considerations; and to apply course materials to this topic.

GER Integrative Capstone Justification:
Justifications for designating BIOL A473 Conservation Biology as a GER Integrative Capstone course include:

1. Knowledge Integration/Interrelationships and Synergy Among GER Disciplines: The overall theme of the course is understanding the relationship of biological conservation principles to other natural and social sciences. The course will focus on the interfaces among natural sciences (geochemistry, geology, geography, mathematics), biological sciences (biology, ecology, conservation, molecular biology, etc.), and the social sciences (particularly human biology, sociology, anthropology).

2. Effective Communication Skills: Course success demands effective communication through essay examinations, individual classroom presentations, brief reports (oral and written) on current controversies surrounding conservation biology, and a final research product.

3. Critical Thinking: Students will not be able to succeed in the course unless they are able to integrate information across disciplines, and critically evaluate the reliability of data and positions presented in lecture, texts, scientific, and popular viewpoints. Student ability to critically evaluate diverse material will be determined based on writing assignments, class presentations, and examinations.

4. Information Literacy: Students are expected to achieve and demonstrate computer and internet skills for acquiring information relevant to current topics in evolutionary biology. This will involve research in the primary scientific literature, and the collection of information from unpublished sources such as popular press and public statements. Students will be required to show that they can critically winnow facts and scientific content from diverse non-scientific sources.

5. Quantitative Perspectives: A critical understanding of basic conservation biology is grounded in many quantitative disciplines, including statistical analysis, applied maths (algebra, calculus, probability and combinatorics, etc.), general and advanced ecology, and quantitative biology. In addition, students must be able to read and interpret scientific data in graphical and tabular form, and to generate appropriate graphical displays of their own results. Exams will specifically test on these skills.

5. Evolving Realities of the 21st Century: The growing understanding that conservation biology is a dynamic and ever present component of modern life, particularly in the context of climate change and anthropogenic change, touches many aspects of science, policy, and social attitudes. This course will help students understand the implication of the processes of conservation biology in a changing environment, and provide them with effective means to communicate its importance and relevance for individuals and society.

V. Topical Course Outline

A. Impacts and Drivers
   1. What is Conservation Biology?
   2. Status of Biodiversity
   3. Predicting Biodiversity
   4. Conservation Hotspots
   5. Extinctions and Its Consequences
   6. Rarity and Small Populations
   7. Habitat Change
   8. Environmental Change
   9. Climate Change
   10. Invasive Species

B. Problems and Approaches
   1. Metapopulations and Populations
   2. Conserving Metapopulations
   3. Habitat Fragmentation
   4. Landscape Analysis and Corridors
   5. Edges, Areas, and Reserves
   6. Habitat Mitigation and Environmental Reconstruction
   7. Conservation Management
   8. Risk Analysis and Decisions
   9. Complex Decision Making

C. Issues and Controversies
   1. Biodiversity and Human Health
   2. Sustainable Development
   3. Endangered Species Act
   4. Ecological Services and Ecosystem Functions
   5. Reserves and Ecological Justice
   6. Environmental Security

VI. Suggested Texts

Groom M, M Meffe, L Carroll. Principles of Conservation Biology. Sinauer Publ. 2009.

Primack RB. Essentials of Conservation Biology. Sinauer Publ. 2010.

VII. Bibliography

Causey D and 6 coauthors. 2005. The paleoenvironment of humans and marine birds of the Aleutian Islands. Fisheries Oceanogr 14: 259-276.

Clavero M and E Garcia-Berthon. 2005. Invasive species are a leading cause of animal extinctions. Trends in Ecology and Evolution 20: 110.

Hebert PDV, EH Penton, JM Burns, DH Janzen, W Hallwachs. 2004. Ten species in one: DNA barcoding reveals cryptic species in Neotropic Skipper butterfly Astraptes fulginator. Proc Natl Acad Sciences 101: 14812-14817.

Klubnikin K and D Causey. 2002. Environmental Security and Conflict: Paradigm for the 21st Century. Journal of Diplomacy and International Relations 3: 104-133.

Klubnikin K and D Causey. 2005. Beyond Trees: Forests, War, and Uneasy Peace. European Tropical Forest Research 43: 27-28.

Lennon JJ, P Koleff, JJD Greenwood, KJ Gaston. 2004. Contribution of rarity and comWedness to patterns of species richness. Ecology Letters 7: 81-87.

Myers N, RA Mittermeier, CG Mittermeier, GAB da Fonseca, J Katt. 2000. Biodiversity Hotspots for conservation priorities. Nature 403: 853-858.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A474	N/A	3	(3+0)

6. Complete Course Title
Ecotoxicology
Ecotoxicology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Examination of the chemical and ecological nature of pollution processes and the major classes and environmental fate of pollutants.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A270 with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Course is being created in response to student interest and to prepare students for graduate school or careers in the environmental sciences. Part of our overall curriculum revision, which seeks to streamline completion of the B.S. in Biological Sciences degree and align our degree with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science)

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A474
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Ecotoxicology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	Examination of the chemical and ecological nature of pollution processes and the major classes and environmental fate of pollutants.
K. Course Prerequisites:	BIOL A271 with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Teach students about the major classes of pollutants, including their chemical structure, toxicological effects, and fate in the environment.
2. Teach students about the routes by which pollutants enter ecosystems, including surface waters, land, and the atmosphere.
3. Teach students about the global transport of pollutants and their fractionation into different environmental compartments.
4. Teach students about the fate of pollutants in individual organisms and tissues and mechanisms of toxicity.
5. Teach students about the effects of pollutants on populations and communities.
6. Teach students about the evolution of resistance to contaminants in populations and community responses to contaminant exposure.
7. Teach students about the use of biomarkers in ecotoxicology and various monitoring techniques.
8. Teach students about remediation techniques and technologies.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Explain the chemistry, toxicological effects and environmental fate of the major classes of contaminants.	Examinations.
2. Explain the global transport, fractionation, and routing of contaminants on both global	Examinations.

and local scales.	
3. Explain the fate of pollutants in individual organisms and their various compartment, as well as the biological mechanisms of toxicity.	Examinations.
4. Extrapolate individual toxicity to understand effects of contaminants on populations and communities.	Examinations.
5. Synthesize knowledge of toxicity mechanisms to understand both evolved responses in populations and emergent effects on community ecology.	Examinations.
6. Explain on a mechanistic level the use of biomarkers and other monitoring techniques in studies of contaminants.	Examinations.
7. Explain the latest science underlying remediation techniques and technologies.	Examinations.
8. Synthesize knowledge across multiple course content areas in written format.	Independent course paper.

IV. Course Level Justification

Designed for Biology and Natural Sciences majors as an elective undergraduate course comparable to 400-level ecotoxicology course offered at other universities. This course covers the principle concepts essential to the student's ability to succeed in graduate programs and career pathways relevant to the discipline of ecotoxicology.

V. Topical Course Outline

A. Pollutants and their fate in ecosystems
   1. Major classes of pollutants
      a. Inorganic ions
      b. Organic pollutants
      c. Organometallic compounds
      d. Radioactive isotopes
      e. Gaseous pollutants
   2. Routes by which pollutants enter ecosystems
      a. Entry into surface waters
      b. Contamination of land
      c. Discharge into the atmosphere
   3. Long range movements and global transport of pollutants
      a. Factors determining movement and distribution of pollutants
      b. Transport in water
      c. Transport in air
   4. The fate of metals and radioactive isotopes in contaminated ecosystems
   5. The fate of organic pollutants in individuals and ecosystems
      a. Fate within individuals
      b. Fate in terrestrial ecosystems
      c. Fate in aquatic ecosystems

B. Effects of pollutants on individual organisms
   1. Toxicity testing
   2. Biochemical effects of pollutants

3. Physiological effects of pollutants
4. Interactive effects of pollutants
5. Biomarkers
6. *In situ* biological monitoring

C. Effects of pollutants on populations and communities
1. Population dynamics
2. Evolution of resistance to pollution
3. Changes in communities and ecosystems

D. Remediation techniques and technologies

VI. Suggested Texts

Principles of Ecotoxicology by Walker, C.H., Hopkin, S.P., Sibly, R.M. & Peakall, D.B., Taylor & Francis. 2012.

Fundamentals of Ecotoxicology by Newman, M.C., CRC Press. 2009.

VII. Bibliography

Colborn, T., Dumanoski, D. & Myers, J.P. *Our Stolen Future*. Dutton. 1996.

Connell, D.W. *Basic Concepts of Environmental Chemistry*. Taylor & Francis. 2005.

Norris, D.O & Carr., J.A. *Endocrine Disruption*. Oxford University Press. 2006.

Yu, S.J. *The Toxicology and Biochemistry of Insecticides*. CRC Press. 2008.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A475	N/A	3	(3+0)

6. Complete Course Title
Fish Ecology
Fish Ecology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
This course provides a broad survey of fish habitats and the ecological processes that govern the performance of individuals, abundance and productivity of populations, and structure of communities, with an emphasis on Alaska's salmon populations.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[BIOL A271 and BIOL A320] with minimum grade of C.

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course has been taught as a selected topics and meets a curricular need for students interested in careers in fisheries. This change is part of our overall curriculum revision, which seeks to streamline completion of the B.S. in Biological Sciencse degree and align our degree with the core concepts and competiencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Health
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A475
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Fish Ecology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	This course provides a broad survey of fish habitats and the ecological processes that govern the performance of individuals, abundance and productivity of populations, and structure of communities, with an emphasis on Alaska's salmon populations.
K. Course Prerequisites:	[BIOL A271 and BIOL A320] with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Describe key attributes of fish habitats including the physical and chemical features that regulate ecosystem productivity
2. Introduce the food webs that support fish production in marine, lotic, and lentic systems.
3. Introduce fish bioenergetics models and examine the environmental factors that regulate fish growth, condition, and reproduction
4. Compare and contrast life history strategies and discuss the role of evolution in shaping life history patterns
5. Discuss the factors that regulate fish biodiversity, current threats to fish biodiversity, and the consequences of biodiversity loss.
6. Cover the basics of population dynamics in the fishery management context
7. Introduce basic field, lab, and statistical methods used by fishery managers and researchers

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Outline the key process, materials, and organisms that constitute aquatic food webs and map the flow of energy and materials that lead to fish production in representative habitats	Quizzes, group application exercises, writing assignments, and/or examinations
2. Demonstrate and apply knowledge of fish ecology to describe linkages among habitat quality, the growth and condition of individuals, the abundance and productivity of populations, and the structure of communities.	Quizzes, group application exercises, writing assignments, and/or examinations
3. Describe the role of evolution in shaping the morphological, physiological, and behavioral adaptations that adapt fishes to their characteristic habitats and enable competition and partitioning of resources among and within species	Quizzes, group application exercises, writing assignments, and/or examinations
4. Discuss the importance of fish biodiversity within populations and communities; characterize important threats to fish biodiversity both regionally and globally; and analyze the ecological and sociological ramifications of diminished biodiversity	Quizzes, group application exercises, writing assignments, and/or examinations
5. Design standardized sampling regimes for specific habitats and apply bioenergetics models, stable isotope analyses, life history models, measures of growth and fitness, population estimates, and stock-recruit models in management and research contexts	Quizzes, group application exercises, writing assignments, and/or examinations

IV. Course Level Justification

This course builds on concepts presented in 200- and 300-level courses and is comparable to 400-level fish ecology courses offered at other universities.

V. Topical Course Outline

A. Food webs and the structure of aquatic ecosystems
   1. The physical environment
   2. The chemical environment
   3. Energy sources and feeding roles

B. Individuals
   1. Bioenergetics
   2. Growth
   3. Reproduction

C. Populations
   1. Survival in the freshwater environment

2. Survival in the marine environment
3. Life history, evolution, and adaptation
4. Population dynamics

D. Communities
1. Predation and competition

E. Conservation
1. Abundance and diversity, past, present and future
2. Biodiversity loss and the consequences thereof

F. Tools for fishery management and research

VI. Suggested Texts

Quinn, T.P. The behavior and ecology of Pacific salmon and trout. American Fisheries Society, Bethesda, Maryland. 2005.

Wootton, R.J. Ecology of Teleost Fishes. 2nd edition. Kluwer Academic Publishers. 1998.

Moyle, P.B., and J.J. Cech. Fishes: an Introduction to Ichthyology. 5th edition. Benjamin and Cummings. 2004.

Selected articles from the primary literature

VII. Bibliography

Diana, J.S. Biology and Ecology of Fishes.Cooper Publishing, Carmel, IN. 2003.

Evans, D. H. The Physiology of Fishes (2nd edition). CRC Press LLC, 519 p. 1998.

Gerking, S. D. Feeding Ecology of Fish. Academic Press, Inc., San Diego, California. 1994.

Groot, C., and L. Margolis (eds.) Pacific Salmon Life Histories., UBC Press. 1991.

Groot, C., L. Margolis, and W. C. Clarke. Physiological ecology of Pacific salmon. UBC Press. 1995.

Helfman, G. S., B.B. Collette, D. E. Facey, and B.W. Bowen. The Diversity of Fishes: Biology, Evolution, and Ecology. Wiley-Blackwell. 2009.

Kapoor, B.G. and T.J. Hara. Sensory Biology of Jawed Fishes: New Insights. Science Publishers, Inc., Enfield, NH. 2001.

Love, M. Certainly more than you want to know about the fishes of the Pacific coast: A postmodern experience. Really Big Press, Santa Barbara, 381 p. 2011.

Mecklenburg, C. W., T.A. Mecklenburg, and L. K. Thorsteinson Fishes of Alaska. American Fisheries Society. 2002.

Pitcher, T. J. The Behaviour of Teleost Fishes. 2nd edition. Chapman & Hall. 1993.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A476		3	(3+0)

6. Complete Course Title
Wildlife Population Dynamics and Management
Wildlife Pop. Dynam. Mgmt
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
History and ecological principles underlying fish and wildlife management, including key theories of population ecology, methods for estimating population size, survival, and recruitment, and discussions of how theory is applied in contemporary population management in the face of uncertainty and habitat changes

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
{BIOL A271 and [MATH A107 or MATH A109 or MATH A200} with minimum grade of C.

16b. Co-requisite(s) *(concurrent enrollment required)*
]

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Creating new, permanent course, for content that has previously been covered in special topics course and meets needs of students interested in careers or graduate school in wildlife biology. This is part of our overall curriculum revision, which seeks to streamline completion of the B.S. in Biological Sciencs degree and align our degree with the core cocepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A476
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Wildlife Population Dynamics and Management
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	History and ecological principles underlying fish and wildlife management, including key theories of population ecology, methods for estimating population size, survival, and recruitment, and discussions of how theory is applied in contemporary population management in the face of uncertainty and habitat changes.
K. Course Prerequisites:	{BIOL A271 and [MATH A107 or MATH A109 or MATH A200]} with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Provide a basic description of the goals of, and need for wildlife management
2. Introduce the philosophy and history of the North American model of wildlife management, including comparison with the European model and govermnent funding mechanisms.
3. Introduce and develop core concepts in population biology and ecology, including population demographic models
4. Emphasize the extent and historical/geographic patterns of human impacts on the willdlife populations, and on how humans have designed and implemented management programs.
5. Provide detailed examples of how the vital rates of populations are influenced by both intrinsic and extrinsic factors, and of how changes in that habitat may

influence species diversity and abundance through impacts on population growth rates and interactions among species.

6. Relate all of the above to current issues in wildlife management and case studies that demonstrate management successes and failures - with a focus on Alaskan issues where possible. The need for balancing different perspectives and needs will be covered - including economic value (eg fisheries, hunting), cultural value (subsistence use), conservation value (wildlife in wildlands, resilience within ecosystems), and future values, and expose students to discussions on these topics from local experts.
7. Teach students how to evaluate and integrate information from a variety of different sources and perspectives.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Indentify and assess the linkages between wildlife population ecology, management approaches, and conservation strategies.	Written assignments and examinations
2. Integrate information from scientific articles with that provided in lecture and textbook assignments, and use this information to evaluate the scientific accuracy of popular press (TV, newspaper, magazine, web) reports on wildlife management issues	Exams, written assignments, in class reports
3. Communicate their understanding of vertebrate population ecology, and the impacts that humans are having on the system directly and indirectly to peers	In-class presentation, exams, and writing assignment
4. Analyze, assess, and evaluate the impact that humans are having on the vertebrate populations through in depth study of current 'hot topics' such as global warming, habitat loss, disease, etc.	Presentations, exams, and writen assignments
5. Analyze the range of options available for addressing specific wildlife management scenarios and identify the consequences (intended and unintended) of each on both wildlife and human populations.	Exams, written assignments, in class reports

IV. Course Level Justification

This course builds on concepts presented in 200 level courses. Students are required to learn and integrate information from a variety of scientific disciplines as it relates to wildlife management, to read, understand, and apply ideas conveyed by primary scientific literature, to synthesize biological knowledge and social considerations; and to apply course materials to current problems.

V. Topical Course Outline

A. Introduction to Wildlife Population Biology and the need for conservation & management
   1. History and philosophy of Wildlife Management
   2. Population ecology methods and approaches

B. Defining a population for management
   1. Species concepts
   2. Distinct Population Segments
   3. The role of genetics

C. Estimating population vital rates
   1. Essential parameters
   2. Methodological approaches
   3. Variation among and within populations
   4. Individual variation in 'quality'

D. Models of population growth
   1. Geometric, exponential, logistic and others
   2. Stage-structured population models
   3. Density dependent models

E. The impact of predation & disease on populations

F. Management of populations
   1. Harvest rates and quotas
   2. Population viability models
   3. Conservation of small and endangered species

G. Case studies demonstrating wildlife management successes and failures

VI. Suggested Texts

Krausman, P.R., B.D. Leopold. Essential Readings in Wildlife Management and Conservation. Johns Hopkins University Press, 696p. 2013.

Vandermeer, J.H. and D.E. Goldberg. Population Ecology: First Principles, 2nd edition. Princeton University Press. 288pp. 2012.

VII. Bibliography

Mills, L.S. Conservation of Wildlife Populations: Demography, Genetics, and Management, 2nd edition. Wiley-Blackwell, 342pp. 2012.

Sinclair, A.R.E., J.M. Fryxell, G. Caughley. Wildlife Ecology, Conservation and Management. Wiley-Blackwell, 488pp. 2006.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A478	N/A	3	(3+0)

6. Complete Course Title
Biological Oceanography
Biological Oceanography
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☒ Credits
- ☐ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☒ Automatic Restrictions
  - ☐ Class ☒ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☐ Course Number
- ☒ Contact Hours
- ☐ Repeat Status
- ☒ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with

☒ Stacked with BIOL A678

Signature Cross-Listed Coordination

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Civil Engineering, MS AEST	6Jan14	Osama Abaza, oabaza@uaa.alaska.edu
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement *Mark appropriate box:*
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Principles of biological oceanography with an emphasis on biological, chemical and physical processes in the world's oceans and linkages between biological ocean processes and carbon transport.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☒ Level

16d. Registration Restriction(s) *(non-codable)*
Junior standing

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Course changes reflect the level at which the course is taught and allow stacking with graduate level course.The laboratory component of the course is being removed.

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Initiation Date: Spring 2014

II. Course Information

A.	College:	College of Arts and Sciences
B.	Course prefix:	BIOL
C.	Course Number:	A478
D.	Number of credits:	3
E.	Contact Hours:	3+0
F.	Course Title:	Biological Oceanography
G.	Grading Basis:	A-F
H.	Implementation Date:	Fall 2015
I.	Cross-listed/Stacked:	BIOL A678
J.	Course Description:	Principles of biological oceanography with an emphasis on biological, chemical and physical processes in the world's oceans and linkages between biological ocean processes and carbon transport.
K.	Course Prerequisites:	N/A
L.	Course Co-requisites:	N/A
M.	Other restrictions:	N/A
N.	Registration Restrictions:	Junior standing
O.	Lab Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Present the concepts and organisms important to the study of biological oceanography.
2. Emphasize the reciprocal effects of biological processes in the oceans and atmosphere.
3. Lead students to consider the biological processes in the oceans in the context of global systems

B. Student Learning Outcomes and Assessment Measures:

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Identify major planktonic organisms, their ecology, global distributions and contributions to nutrient and chemical dynamics	Written assignments and examinations
2. Identify major benthic organisms, their ecology, global distributions and contributions to sediment/ water chemical dynamics	Written assignments and examinations
3. Communicate their understanding of the ocean environment with reference to organisms to peers	Written assignments, in class presentation

IV. Course Level Justification

This course builds on concepts presented in 200 level courses. Students are required to learn and integrate information from a variety of scientific disciplines as it relates to biological oceanography

V. Topical Course Outline

A. History of biological oceanography
B. Primary production
    1. Phytoplankton diversity
    2. Phytoplankton growth
    3. Blooms and toxic blooms
    4. Microbial primary production
C. Secondary production
    1. Zooplankton diversity
    2. Zooplankton growth
    3. Zooplankton population biology and models
D. Benthic environments
    1. Organismal diversity
    2. Community ecology
    3. Special environments: Hydrothermal vents, hydrocarbon seeps, methane ice, cold
        i. water corals, seamounts
E. Biogeography
    1. Pelagic biogeography
    2. Bioluminescence
    3. Biomes and provinces
    4. Benthic biogeography
F. Atmospheric impacts of biological processes
G. Fisheries

VI. Suggested Texts

Mann, K.H. and J.R.N. Lazier. Dynamics of Marine Ecosystems. Wiley-Blackwell. 2006.

Miller, C. B. and P. A. Wheeler. Biological Oceanography, 2nd edition. Wiley-Blackwell. 2012.

VII. Bibliography

Gage, J.D. and P.A. Tyler. Deep-Sea Biology: A natural history of the organisms at the deep-sea floor. Cambridge University Press. 1999.

Van Dover, C.L. The Ecology of Deep-sea Hydrothermal Vents. Princeton University Press. 2000.

Review articles from the following journals:
Science, American Association for the Advancement of Science
Nature, Nature Publishing Group
Deep Sea Research, Elsevier
Marine Ecology Progress Series, Inter-Research

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A678	N/A	4	(4+0)

6. Complete Course Title
Advanced Biological Oceanography
Adv. Biological Oceanog.
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall /9999

12. ☐ Cross Listed with

☒ Stacked with BIOL A478 _____ Cross-Listed Coordination
Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement *Mark appropriate box:*
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Principles of biological oceanography with an emphasis on biological, chemical and physical processes in the world's oceans and linkages between biological ocean processes and carbon transport.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☒ Level

16d. Registration Restriction(s) *(non-codable)*
Graduate Standing

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course addition meets a need for graduate students in the Dept. of Biological Sciences, particularly those with research foci in Marine Biology.

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Initiation Date: Spring 2014

II. Course Information

A.	College:	College of Arts and Sciences
B.	Course prefix:	BIOL
C.	Course Subject/Number:	A678
D.	Number of credits:	4
E.	Contact Hours:	4+0
F.	Course Title:	Advanced Biological Oceanography
G.	Grading Information:	A-F
H.	Implementation Date:	Fall 2015
I.	Cross-listed/ Stacked:	BIOL A478
J.	Course Description:	Principles of biological oceanography with an emphasis on biological, chemical and physical processes in the world's oceans and linkages between biological ocean processes and carbon transport.
K.	Course Prerequisites:	N/A
L.	Course Co-requisites:	N/A
M.	Other restrictions:	N/A
N.	Registration Restrictions:	Graduate Standing
O.	Lab Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Present the concepts and organisms important to the study of biological oceanography.
2. Emphasize the reciprocal effects of biological processes in the oceans and atmosphere.
3. Lead students to consider the biological processes in the oceans in the context of global systems

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Identify major planktonic organisms, their ecology, global distributions and contributions to nutrient and chemical dynamics	Written assignments and examinations
2. Identify major benthic organisms, their ecology, global distributions and contributions to sediment/ water chemical dynamics	Written assignments and examinations
3. Communicate their understanding of the ocean environment with reference to organisms to peers	Written assignments, in class presentation
4. Synthesize and analyze primary literature	In class presentation, written assignments
5. Create and present a novel hypothesis as a	Written assignment

grant proposal	

IV. Course Level Justification

This course is similar to other graduate level courses in biological oceanography offered at other universities.

V. Topical Course Outline

A. History of biological oceanography
B. Primary production
    1. Phytoplankton diversity
    2. Phytoplankton growth
    3. Blooms and toxic blooms
    4. Microbial primary production
C. Secondary production
    1. Zooplankton diversity
    2. Zooplankton growth
    3. Zooplankton population biology and models
D. Benthic environments
    1. Organismal diversity
    2. Community ecology
    3. Special environments: Hydrothermal vents, hydrocarbon seeps, methane ice, cold
        i. water corals, seamounts
E. Biogeography
    1. Pelagic biogeography
    2. Bioluminescence
    3. Biomes and provinces
    4. Benthic biogeography
F. Atmospheric impacts of biological processes
G. Fisheries

VI. Suggested Texts

Miller, C. B. and P. A. Wheeler. Biological Oceanography, 2nd edition. Wiley-Blackwell. 2012.

Mann, K.H. and J.R.N. Lazier. Dynamics of Marine Ecosystems. Wiley-Blackwell. 2006.

VII. Bibliography

Gage, J.D. and P.A. Tyler. Deep-Sea Biology: A natural history of the organisms at the deep-sea floor. Cambridge University Press. 1999.

Van Dover, C.L. The Ecology of Deep-sea Hydrothermal Vents. Princeton University Press. 2000.

Articles from the following journals:
Science, American Association for the Advancement of Science
Nature, Nature Publishing Group
Deep Sea Research, Elsevier
Marine Ecology Progress Series, Inter-Research

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A480	N/A	3.0	(3+0)

6. Complete Course Title
Ecological and Conservation Genetics
Ecological Conservation Gen.
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
An in-depth examination of the primary forces and processes involved in shaping genetic variation in natural populations (mutation, drift, selection, migration, recombination, mating patterns, population size, and population subdivision), methods of measuring genetic variation in nature, and experimental tests of important ideas in population genetics and microevolution theory.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[BIOL A252 or BIOL A288] with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The course is needed to provide majors in Biological Sciences and Natural Sciences with an upper division course in applied genetics.This is part of our overall curriculum revision, which seeks to streamline completion of the B.S. in Biological Sciencs degree and align our degree with the core cocepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A480
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Ecological and Conservation Genetics
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	An in-depth examination of the primary forces and processes involved in shaping genetic variation in natural populations (mutation, drift, selection, migration, recombination, mating patterns, population size, and population subdivision), methods of measuring genetic variation in nature, and experimental tests of important ideas in population genetics and microevolution theory.
K. Course Prerequisites:	[BIOL A252 or BIOL A288] with minimum grade of C
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Provide the basis for advanced analysis of evolutionary theory and concepts
2. Build on a theoretical framework to describe how evolutionary process results in evolutionary pattern
3. Link current research on how microevolutionary processes relate to observed responses to environmental and climate change
4. Enable students to undertake analyses and conceptualization of quantitative evolutionary mechanisms
5. Provide detailed examples of modern evolutionary analysis and theory as mechanisms of biotic change and diversification
6. Provide expert assistance in use and interpretation of current analytical software developed for quantitative evolutionary analysis

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes	Assessment Procedures
1. Gain in-depth understanding of evolutionary process, microevolution mechanisms, and macroevolutionary	Exams and conceptual paper

patterns	
2. Read, understand, and integrate information from primary scientific literature; conceptualize key concepts in original formulations	Exams and conceptual paper
3. Communicate to others their understanding of microevolutionary mechanisms and process	Conceptual paper, oral presentation, and class participation
4. Basic comprehension of core concepts	Exams

IV. Course Level Justification

This course is similar to 400-level coruses in conservation genetics offered at other universities. Students are required to learn and integrate information at an upper-division level from a variety of scientific disciplines as it relates to applied genetics, advanced evolutionary and ecological analysis, and microevolutionary proesses; to read, understand, and apply ideas conveyed by primary scientific literature; and to synthesize current biological knowledge, ecological and evolutionary theory.

V. Topical Course Outline

A. Genetic and statistical background
B. Genetic and phenotypic variation
C. Organization of genetic variation
D. Population substructure
E. Sources of variation
F. Darwinian Selection
G. Complex Selection, Sexual Selection
H. Random genetic drift
I. Coalescence
J. Molecular population genetics
K. Mutation and Recombination
L. Stochastic Combinatorics
M. Neutral theory
N. Non-Darwinian dynamics

V. Suggested Texts

Frankham R, Ballou JD, Briscoe DA. Introduction to Conservation Genetics. Cambridge U Press. 2009.

Lowe A, Harris S, Ashton P. Ecological Genetics: Design, Analysis, and Application. Blackwell Publ. 2004.

VII. Bibliography

Cassinello J. 2005. Inbreeding Depression in Gazelles. Biol Conserv 122: 453-464.

Frankham R. 1995. Inbreeding and Extinction: A Threshold Effect. Conserv Biol 14: 639-649.

Neaves LE et al. 2009. Landscape Discontinuities Influence Gene Flow. Molec Ecol 18: 3363-3378.

Sherwin WB et al. 2000. Analysis and Conservation Implications of Koala Genetics. Conserv Biol 14: 639-649.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A481	BIOL A378	3	(3+0)

6. Complete Course Title
Marine Biology
Marine Biology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☒ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☒ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1. Environment and Society, BA	6Jan14	Dorn VanDommelen, dvandommelen@uaa.alaska.edu
2. Environment and Society, BS	6Jan14	Dorn VanDommelen, dvandommelen@uaa.alaska.edu
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☒ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
An examination of marine biology, with a focus on understanding the pathways and transformation of energy and matter in coastal, pelagic, and benthic, waters, particularly those in Alaska. Students will gain an appreciation of the influence of the physical environment, climate change, and human activities on marine species diversity, food webs, and tropho-dynamics

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[BIOL A271 or ENVI A211] with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Completion of all GER Tier 1 courses is required

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Renumbering course to comply with revision to BIOL undergraduate curricula; prerequisites revised to reflect changes to ENVI curricula (ENVI 202 no longer exists)

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A481
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Marine Biology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	An examination of marine biology, with a focus on understanding the pathways and transformation of energy and matter in coastal, pelagic, and benthic, waters, particularly those in Alaska. Students will gain an appreciation of the influence of the physical environment, climate change, and human activities on marine species diversity, food webs, and tropho-dynamics
K. Course Prerequisites:	[BIOL A271 or ENVI A211] with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	Completion of all GER Tier 1 courses is required.
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Provide a basic description of the physical, chemical, and geological properties of the ocean, and the different ocean habitats
2. Build on this conceptual framework to describe how physical and biological ocean systems are impacted by changing climate and human activities
3. Link physical features of the ocean habitat (pre- and post- human impact) to ocean trophic dynamics and food webs.
4. Emphasize the extent and historical/geographic patterns of human impacts on the marine environment, and describe how these impacts are mediated by and through biological and physical processes.
5. Provide detailed examples of how the physiological traits of organisms are uniques linked to their habitat, and of how changes in that habitat may influence species diversity and abundance through impacts on physiological properties
6. Relate all of the above to current issues in Alaskan marine ecosystems and resources - with a focus on balancing the many values represented in our environment. Such values include economic value (fisheries, oil explotation, mining), cultural value (subsistence use, coastal villages and their impact), conservation value (nursery ground habitats, marine protected areas), and future values (arctic exploration with

shrinking ice etc), and expose students to discussions on these topics from local experts.

7. Teach students how to evaluate and integrate information from a variety of different sources and perspectives.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Indentify and assess the linkages between the chemistry and physiology of living organisms and the physical and biological aspects of the marine environment.	Written assignments and examinations
2. Integrate information from scientific articles with that provided in lecture and textbook assignments, and use this information to evaluate the scientific accuracy of popular press (TV, newspaper, magazine, web) reports on marine issues	Exams, written assignments, in class reports
3. Communicate their understanding of the marine ecosytem, and the impacts that humans are having on the system directly and indirectly to peers	In-class presentation, exams, and writing assignment
4. Analyze, assess, and evaluate the impact that humans are having on the marine system through in depth study of current 'hot topics' such as global warming, fisheries collapse etc.	Presentations, exams, and writen assignments

IV. Course Level Justification

This course builds on concepts presented in 200 level courses. Students are required to learn and integrate information from a variety of scientific disciplines as it relates to marine ecosystems, to read, understand, and apply ideas conveyed by primary scientific literature, to synthesize biological knowledge and social considerations; and to apply course materials to current problems.

V. Topical Course Outline

A. Basic Principles of Physical Oceanography
   1. Properties of water, salt, temperature, light
   2. Coriolis effect and tides
   3. Wind-driven and thermohaline circulation

B. Major Ocean Currents and Domains
   1. Global circulation patterns
   2. Alaskan circulation patterns
   3. Thermoclines, fronts, gyres, eddies

C. Ocean Climates & Impact of Global Warming
   1. Seasonal patterns of heat flux
   2. Impact of ice on currents
   3. Feedback loops

D. Ecology of the Open Ocean
    1. Sources of organic and inorganic nutrients
    2. Phytoplankton diversity & adaptations
    3. Factors influencing primary productivity
E. Pelagic food webs
    1. Zooplankton and methods for exploiting phytoplankton
    2. Necton and foraging adaptations
F. Trophic dynamics and foods webs
    1. Fisheries and their ecological and social impacts
    2. Major fisheries species & locations
G. Methods of resource exploitation
    1. Impact of overfishing on ecosystem
    2. Management methods and legislation
    3. Impact of different management regimes on fishers
H. Ecology of the coastal zones
    1. Physical challenges and adaptations
    2. Nutrients and tropho-dynamics in various marine environments
I. Coastal polar ecosystems
J. Impacts of coastal development and use
    1. On physical habitat
    2. On biological habitats
    3. On health of the ecosystem
    4. Potential solutions / remediation

VI. Suggested Texts

Kaiser, M.J., M.J. Attrill, S. Jennings, and D.N. Thomas. Marine Ecology, Processes, Systems, and Impacts. 2nd edition, Oxford University Press. 2011.

Nybakken , J.D., and Bertness, M.W. Marine Biology, 6th Edition. Benjamin Cummings, 592pp. 2004.

VII. Bibliography

Levinton, J.S. Marine Biology: Function, Biodiversity, Ecology. 4th Edition. Oxford University Press, 576pp. 2013.

Barber, R.T. and F.P. Chavez. 1983. Biological Consequences of El Nino. Science 222 (4629):1203-1210

Benson, A. and A. Trites. 2002. Ecological effects of regime shifts in the Bering Sea and Eastern North Pacific Ocean. Fish and Fisheries 3: 95-113

Estes, J.A., E.M. Danner, D.F. Doak, B. Konar, A.M. Springer, P.D. Steinberg, M.T. Tinker, T.M. Williams. 2004. Complex Trophic Interactions in Kelp Forest Ecosystems. Bulletin of Marine Science 74(3): 621-638.

Estes, J.A., M. T. Tinker, T. M. Williams, D. F. Doak. 1998. Killer Whale Predation on Sea Otters Linking Oceanic and Nearshore Ecosystems. Science 282: 473-476

Frank, K.T., Petrie, B., Choi, J.S., Leggett, W.C. 2005. Trophic Cascades in a Formerly Cod-Dominated Ecosystem. Science 308: 1621-1623

Grebmeier,J.M., J.E. Overland, S.E. Moore, E.V. Farley, E.C. Carmack, L.W. Cooper, K.E. Frey, J.H. Helle, F.A. McLaughlin, S.L. McNutt (2006) A Major Ecosystem Shift in the Bering Sea.

Greene, C.H. and Pershing, A.J. 2007. Climate Drives Sea Change. Science 315: 1084-1085

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Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A482	N/A	3	(3+0)

6. Complete Course Title
Spatial Ecology
Spatial Ecology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
An examination of spatial ecology including: 1) the physical and ecological nature of landscapes, 2) the use of GIS tools to map and understand patterns in physical and biological properties and 3) the use of case studies that apply GIS tools to ecological and abiotic processes such as migration of ungulates and birds; local-regional-continental and global patterns of precipitation chemistry and associations of societal practices and spatial patterns in the water and carbon cycles.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A271 with minimum grade of C.

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
New course which meets the needs of students interested in graduate work or careers in ecology. This is part of our overall curriculum revision, which seeks to streamline completion of the B.S. in Biological Sciencs degree and align our degree with the core cocepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A482
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Spatial Ecology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	An examination of spatial ecology including: 1) the physical and ecological nature of landscapes, 2) the use of GIS tools to map and understand patterns in physical and biological properties and 3) the use of case studies that apply GIS tools to ecological and abiotic proceses such as migration of ungulates and birds; local-regional-continential and global patterns of preciptation chemisry and associations of societial practices and spatial patterns in the water and carbon cycles.
K. Course Prerequisites:	BIOL A271 with minimum grade of C.
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	N/A
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Provide a description of the abiotic and biotic environments from the micro to the global scale.
2. Discuss the role of key abiotic processes that vary spatially and temporally that have major effects on organisms, ecosystems and landscapes.
3. Provide advanced information on food web ecology, atmospheric processes, land use patterns and migration ecology.
4. Introduce the vocabulary of Geographic Information Systems.
5. Introduce GIS concepts through discussion of spatial patterns in abiotic traits, animal distributions and migration dynamics.
6. Conduct class exercises in ArcGIS.
7. Encourage class discussion of spatial issues that are of relevance to Alaska, the Arctic and the global community.
8. Help students understand GIS applications to research and resource management.

B. Student Learning Outcomes and Assessment Measures:

Student Learning Outcomes: Upon completion of	Assessment Measures

this course, the student will be able to:	
1. Describe traits of the abiotic and biotic environment that have important spatial and temporal patterns.	Written assignments and examinations
2. Describe key migration and food web traits in northern systems and key spatial patterns.	Written assignments and examinations
3. Explain and use the key facets of GIS tools and their application to spatial ecology	Written assignments, examinations and classroom exercises
4. Explain some of the causes of spatial and temporal patterns of animal distributions, atmospheric chemistry, the water and the carbon cycles.	Written assignments and examinations
5. Describe how important societal processes- land use change- is being manifested spatially in Arctic and Temperate systems.	Written assignments and examinations, classroom discussions
6. Interpret the causes of spatial and temporal patterns in abiotic and biotic traits.	Written assignments and examinations, classroom discussions

IV. Course Level Justification

The class builds upon a foundation of basic biological, ecological and environmental knowledge. It assumes some proficiency with the vocabulary of biology and environmental sciences. It is similar to other senior level courses in ecology at other universities.

V. Topical Course Outline

A. Overview of Landscape Ecology
   1. Facets of Abiotic Traits-micro to global scales
      a. Precipitation
      b. Temperature
   2. Properties of Key Biotic traits
      a. Animal Abundances
      b. Species Distributions
   3. Watershed and Ecosystem Processes
      a. Biogeochemical Cycles
      b. Linkages between system components
   4. Food web Ecology
      a. Land
      b. Aquatic
      c. Marine
   5. Migration Ecology
      a. Birds
      b. Fish
      c. Mammals

B. Spatial and temporal patterns in Landscapes
   1. Spatial and temporal variation in Abiotic traits
      a. Precipitation
      b. Atmospheric Chemistry
      c. Temperature
   2. Spatial and temporal variation in biotic traits
      a. Birds
      b. Fish

        c. Mammals
        d. Insects
        e. Human activities

C. Geographic Information Systems
    1. ArcGIS Introduction
    2. Data Collection
    3. Data Management
    4. Types of GIS files
        a. Shapefiles/geodata bases
    5. Retrieval of data-bases
    6. Development of Data layers
    7. Modeling techniques for GIS data

D. Application exercises in GIS and Spatial Ecology
    1. Compare existing techniques for modeling species distribution, habitat use, and niche selection
    2. Apply advanced spatial analysis techniques to real-world migration ecology, conservation biology, precipitation and biogeochemistry, food web ecology, and case examples based on Alaska, Arctic, Boreal and Global ecology.

VI. Suggested Texts

Harvey, F. Primer of GIS: Fundamentals of Geographic and Cartographic Concepts. 2008

Gorr, W and K. Kurland. GIS Tutorial 1: Basic Workbook. 2010

VII. Bibliography

Journals that feature Spatial Ecology:

Ecology. Ecological Society of America. Ithaca, NY
Ecological Monographs. Ecological Society of America. Ithaca, NY
Functional Ecology. Journals of the British Ecological Society
Oecologica. International Association for Ecology. Berlin
Landscape Ecology, Springer Verlag, NY

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A483	N/A	2	(2+0)

6. Complete Course Title
Exploration Ecology
Exploration Ecology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
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Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
An exploration of the principles and techniques used for study and collection of baseline ecological data in remote landscapes. Course activities will focus on survey and analytical resources, and design of simple ecological projects as well as those with complex and multidisciplinary components

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A271 with minimum grade of C.

16b. Co-requisite(s) *(concurrent enrollment required)*
BIOL A484

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Instructor Approval

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The course is needed to provide majors in Biological Sciences and Natural Sciences with an upper division course in advanced ecological techniques.The addition is part of an overall curriculum revision in the Biological Sciences in which we aim to align our curriculum with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A483
D. Number of Credits:	2
E. Contact Hours:	2+0
F. Course Title:	Exploration Ecology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	An exploration of the principles and techniques used for study and collection of baseline ecological data in remote landscapes. Course activities will focus on survey and analytical resources, and design of simple ecological projects as well as those with complex and multidisciplinary components.
K. Course Prerequisites:	BIOL A271 with minimum grade of C
L. Course Co-requisites:	BIOL A484
M. Other Restrictions:	N/A
N. Registration Restrictions:	Instructor Approval
O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:
1. Provide a basic understanding of ecological survey and analysis
2. Enable students to apply theory to field-based settings.
3. Assist students in acquiring skills needed for acquisition and analysis of data, interpretation of results, and preparation of reports and publication.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Deomonstrate understanding of critical aspects of ecological theory relating to acquisition of baseline data and information.	Exams and written assignments
2. Read, understand, and integrate information from scientific articles with that provided in lecture and textbook assignments, and to use this information to evaluate the scientific accuracy of reports from the popular press or public science.	Exams, written assignments, in-class presentations.
3. Communicate to others the results of original research they have conducted	Written reports, in-class presentations.

IV. Course Level Justification This course is proposed to build field course offerings in the department and greater course depth in advanced ecology and environmental biology.

V. Topical Course Outline

A. Introduction
   1. Field Safety
   2. Planning a Research Program

B. Research Design
   1. Principles of Sampling
   2. Data Acquisition
   3. General Census Methods
   4. Data Mining
   5. General Survey Methods
   6. Data Reduction
   7. Introduction to Analysis

C. Introduction to Analysis
   1. Using R For Analysis
   2. Free-ware Software Programs
   3. Data Screening

D. Statistical Analysis
   1. Univariate Statistics
   2. Multivariate Statistics
   3. Group Analysis

E. Testing and Discrimination
   1. Multivariate Gradient Analysis
   2. Ordination

F. Photogrammetry and Image Analysis

G. Time Series Analysis

H. Reporting and Results Selection

VI. Suggested Texts

Braude S, Low BS. An Introduction to Methods and Models in Ecology. Princeton. 2010.

Morris WF, Doak DF. Quantitative Conservation Biology. Sinauer Publ. 2002.

VII. Bibliography

Anderson, DR and KP Burnham. 2002. Avoiding pitfalls when using information-theoretic methods. J. Wildl. Manage. 66:912-918.

Anderson, DR, KP Burnham, WL Thompson. 2000. Null hypothesis testing: Problems, prevalence, and an alternative. J. Wildl. Manage. 64:912-923.

Burnham, KP and DR Anderson. 2001. Kullback-Leibler information as a basis for strong inference in ecological studies. Wildlife Research 28:111-119.

Cox TF, and MAA Cox. Multidimensional scaling. Second Edition. Chapman & Hall/CRC. 2001.

Grand J, and SA Cushman. 2003. Multiple-scale analysis of bird-habitat relationships: breeding birds in a pitch pine-scrub oak (Pinus rigida-Quercus ilicifolia) community. Biological Conservation. 12(3):307-317.

Manly BFJ. Multivariate statistical methods: a primer. Chapman & Hall. 2004.

Mills LS. Ethics and the wildlife population biologist," pp. 33-37 in: Mills LS. Conservation of Wildlife Populations. Blackwell Pub., Malden MA. 2007. "

Sutherland, WJ, ed. Ecological Census Techniques. Cambridge Univ. Press, Cambridge, UK. 1996.

Ter Braak CJF, and PFM Verdonschot. Canonical correspondence analysis and related multivariate. 1995.

Wilson, DE, et al., eds. Measuring and Monitoring Biological Diversity: Standard Methods for Mammals. Smithsonian Inst. Press, Washington D.C. 1996.

Wong C. 2007. Preparing for the field season. ESA Bulletin 88(1).

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A484	N/A	4	(0+8)

6. Complete Course Title
Experiential Learning: Exploration Ecology Field Study
EL: Exploration Ecology Field
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Field exploration of the principles and techniques used for study and collection of baseline ecological data in remote landscapes. Course activities will focus on field survey and methodology, and design of simple ecological projects as well as those with complex and multidisciplinary components

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*

16b. Co-requisite(s) *(concurrent enrollment required)*
BIOL A483

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Instructor Approval

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The course is needed to provide majors in Biological Sciences and Natural Sciences with an upper division course in advanced ecological techniques.The addition is part of an overall curriculum revision in the Biological Sciences in which we aim to align our curriculum with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A484
D. Number of Credits:	4
E. Contact Hours:	0+8
F. Course Title:	Experiential Learning: Exploration Ecology Field Study
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	Field exploration of the principles and techniques used for study and collection of baseline ecological data in remote landscapes. Course activities will focus on field survey and methodology, and design of simple ecological projects as well as those with complex and multidisciplinary components
K. Course Prerequisites:	N/A
L. Course Co-requisites:	BIOL A483
M. Other Restrictions:	N/A
N. Registration Restrictions:	Instructor Approval
O. Course Fees:	Yes

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Provide a basic understanding of ecological survey and analysis
2. Enable students to apply theory to field-based settings.
3. Assist students in acquiring skills needed for acquisition and analysis of data, interpretation of results, and preparation of reports and publication.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Design and conduct field based ecological research	Written assignments and data logs.
2. Utilize field-collected data in scientific analysis	Written assignments and reports
3. Initiate, understand, and follow appropriate safety, collection, landuse, and other regulations	Permits, forms, and reports

IV. Course Level Justification

This course builds field course offerings in the department and greater course depth in advanced ecology and environmental biology.

V. Topical Course Outline

Lab 1: Lab and Field Safety
Lab 2: Techniques of Sample Counts (Mark-Recapture, N-mixture Models)
Lab 3: Techniques of Sample Counts 2
Lab 4: Field Survey Techniques
Lab 5: Distance Sampling, Indices, and Metrics
Lab 6: Indirect Sampling by Proxy
Lab 7: Indirect Sampling by Proxy 2
Lab 8: Introduction to R Programming
Lab 9: Multivariate Analysis, Groups
Lab 10: Multivariate Analysis, Gradients
Lab 11: Multivariate Analysis, Higher-order and Discrete
Lab 12: Meta-Analysis.

VI. Suggested Texts

Braude S, Low BS. An Introduction to Methods and Models in Ecology. Princeton. 2010.

Morris WF, Doak DF. Quantitative Conservation Biology. Sinauer Publ. 2002.

VII. Bibliography

Anderson, DR and KP Burnham. 2002. Avoiding pitfalls when using information-theoretic methods. J. Wildl. Manage. 66:912-918.

Anderson, DR, KP Burnham, WL Thompson. 2000. Null hypothesis testing: Problems, prevalence, and an alternative. J. Wildl. Manage. 64:912-923.

Burnham, KP and DR Anderson. 2001. Kullback-Leibler information as a basis for strong inference in ecological studies. Wildlife Research 28:111-119.

Cox TF, and MAA Cox. Multidimensional scaling. Second Edition. Chapman & Hall/CRC. 2001.

Grand J, and SA Cushman. 2003. Multiple-scale analysis of bird-habitat relationships: breeding birds in a pitch pine-scrub oak (Pinus rigida-Quercus ilicifolia) community. Biological Conservation. 12(3):307-317.

Manly BFJ. Multivariate statistical methods: a primer. Chapman & Hall. 2004.

Mills LS. "Ethics and the wildlife population biologist," pp. 33-37 in: Mills LS. Conservation of Wildlife Populations. Blackwell Pub., Malden MA. 2007.

Sutherland, WJ, ed. 1996. Ecological Census Techniques. Cambridge Univ. Press, Cambridge, UK.

Wilson, DE, et al., eds. Measuring and Monitoring Biological Diversity: Standard Methods for Mammals. Smithsonian Inst. Press, Washington D.C. 1996.

Wong C. 2007. Preparing for the field season. ESA Bulletin 88(1).

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A486	N/A	3	(3+0)

6. Complete Course Title
Evolutionary Ecology
Evolutionary Ecology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☒ Add *or* ☐ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☐ Other (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Explores conceptual issues in the evolution of life histories and species interactions, as well as foundational and contemporary research in topics such as quantitative genetics, natural selection, and the evolution of sex. The course includes collection, interpretation, and integration of data into papers and presentations. Themes, including readings and case studies, will change with instructor.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[BIOL A271 and BIOL A288] with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The course is needed to provide majors in Biological Sciences and Natural Sciences with an upper division course in evolutionary ecology.Creating new, permanent course as part of our overall curriculum revision, which seeks to streamline completion of the B.S. in Biological Sciencs degree and align our degree with the core cocepts and competencies outlined in Vision and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College:	College of Arts and Sciences
B. Course Prefix:	BIOL
C. Course Number:	A486
D. Number of Credits:	3
E. Contact Hours:	3+0
F. Course Title:	Evolutionary Ecology
G. Grading Basis:	A-F
H. Implementation Date:	Fall 2015
I. Cross-listed/Stacked:	N/A
J. Course Description:	Explores conceptual issues in the evolution of life histories and species interactions, as well as foundational and contemporary research in topics such as quantitative genetics, natural selection, and the evolution of sex. The course includes collection, interpretation, and integration of data into papers and presentations.
K. Course Prerequisites:	[BIOL A271 and BIOL A288] with minimum grade of C
L. Course Co-requisites:	N/A
M. Other Restrictions:	N/A
N. Registration Restrictions:	NoneN/ANo

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Provide a basis for understanding the principles of the evolution.
2. Explain common themes in the evolution of life histories
3. Present foundational and contemporary studies for discussion.
4. Contrast a range of approaches in the study of evolutionary ecology.
5. Present important themes and primary literature in evolutionary ecology in the instructor's area of expertise (e.g., vertebrate evolution, plant-animal interactions, etc.)

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Contrast the ecological contexts that result in the evolution of various life history traits.	Examinations and/or written assignments
2. Synthesize the relationships of trait variation, heritability, and phenotypic selection to explain responses to evolution.	Examinations and/or written assignments
3. Evaluate foundational and contemporary research in evolutionary ecology.	Discussions and/or student presentations

4. Discuss key elements of evolutionary ecology in the focus area	Examinations and/or written assignments
5. Compose and present a review paper that includes synthesis of multiple scientific papers and/or data.	Examinations and/or written and oral assignments

IV. Course Level Justification

This course employs fundamental elements in evolution, genetics, and ecology in a synthetic approach to explore contemporary research questions in the field and is similar to other 400-level ecology courses offered at other universities.

V. Topical Course Outline

A. Introduction and Basic Principles
B. Fundamental Patterns in Evolution
    1. Macroevolutionary perspective: Speciation, Extinction, and Diversification Rates
C. Trait Variation and Natural Selection
    1. Phenotypic, Genotypic, Environmental Sources of Variation
    2. Changes in Trait Distribution Within Generations
D. Phenotypic Plasticity
    1. Genotype by Environmental Interactions
E. Fitness and Evolutionarily Stable Strategies
F. Quantitative Genetics and Heritability
    1. Additive and Non-Additive sources of Phenotypic Variation
    2. Measuring Trait Heritability
    3. Response to Selection
    4. Correlated Trait Evolution
G. Allocation and Trade-Offs
H. Evolution of Sex and Mating Systems
    1. Costs and Benefits of Gene Exchange
    2. Patterns of Outcrossing, Mixed Mating, and Self-fertilization
I. Sexual Selection
J. Evolutionary Patterns in Birth, Growth, and Death
    1. Offspring Number and Size
    2. Growth Rates
    3. Timing of Reproduction
    4. Senescence
K. Evolution of Species Interactions
    1. Coevolution
    2. Character Displacement
    3. Defense
    4. Mutualism
L. Patterns Specialization and Generalization

VI. Suggested Texts

Fox, CW, Roff DA, Fairbairn DJ. Evolutionary Ecology: Concepts and Case Studies. Oxford, UK: Oxford University Press; 2001.

Poulin, R. Evolutionary Ecology of Parasites. 2nd ed. Princeton, NJ: Princeton University Press; 2011.

Patiny, S. Evolution of Plant-Pollinator Relationships. Cambridge, UK: Cambridge University Press; 2012.

VII. Bibliography

Journal articles from the primary literature (Evolution, Nature, Science, Proceedings of the National Academy of Sciences, Trends in Ecology and Evolution, etc.).

Additional reference books in thematic areas, for example:

Bell, MJ., Foster, SA. The Evolutionary Biology of the Threespine Stickleback. New York, NY: Oxford University Press; 1994.

Fritz, RS, Simms EL. Plant Resistance to Herbivores and Pathogens: Ecology, Evolution, and Genetics. Chicago, IL: University of Chicago Press: 1992.

Schafer MH, Ruxton, GD. Plant-Animal Communication. Oxford, UK: Oxford University Press; 2011.

Waser, NM, Ollerton J. Plant-Pollinator Interactions: From Specialization to Generalization. Chicago, IL: University of Chicago Press; 2006.

Wilmer, P. Pollination and Floral Ecology. Princeton, NJ; Princeton University Press; 2011.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A487	N/A	3.0	(3+0)

6. Complete Course Title
Comparative Anatomy of Vertebrates
Comp. Anatomy of Vertebrates
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☒ Credits
- ☐ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☐ Course Number
- ☒ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
A comparative exploration of vertebrate anatomy. The aim of the course is to investigate the links between the forms and functions of shared organ systems and to discuss their evolutionary, ecological and physiological implications.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A288 with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
We are removing the laboratory portion of the course. The course has been modified as part of our overall curriculum revision in which we aim to streamline the B.S. in Biological Sciences degree and align our curriculum with the core concepts and competencies outlined in Vison and Change in Undergraduate Biology Education (National Science Foundation and American Association for the Advancement of Science).

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College: College of Arts and Sciences
B. Course Prefix: BIOL
C. Course Number: A487
D. Number of Credits: 3
E. Contact Hours: 3+0
F. Course Title: Comparative Anatomy of Vertebrates
G. Grading Basis: A-F
H. Implementation Date: Fall 2015
I. Cross-listed/Stacked: N/A
J. Course Description: A comparative exploration of vertebrate anatomy. The aim of the course is to investigate the links between the forms and functions of shared organ systems and to discuss their evolutionary, ecological and physiological implications
K. Course Prerequisites: BIOL A288 with minimum grade of C.
L. Course Co-requisites: N/A
M. Other Restrictions: N/A
N. Registration Restrictions: N/A
O. Course Fees: No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:
1. Present the principles of comparative vertebrate anatomy and integrate biological principles of chordate (particularly vertebrate) structure, function and ecology.
2. Characterize how organ systems within the vertebrates are related phylogenetically and evolutionarily.
3. Describe important anatomical features and phylogenetic relationships within the vertebrates, including the comprehension of phylogenetic relationships.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Describe principles of comparative vertebrate anatomy mirrored by evolutionary associations between the structure, function and ecology of chordate phyla (particularly vertebrates).	Written assignments and examinations
2. Master and apply the necessary background knowledge and intellectual skills required to discuss and critically evaluate the fundamental features associated with vertebrate functional morphology and its evolution.	Written assignments and examinations

3. Identify vertebrate organ systems and their structure and functions	Written assignments and examinations
4. Master the vocabulary and nomenclature associated with the anatomy of the vertebrate organ systems	Written assignments and examinations

IV. **Course Level Justification**

This course is designed for Biological and Natural Sciences majors as an elective undergraduate course comparable to 400-level comparative anatomy of vertebrates courses offered at other universities. This course covers the principle concepts and processes of comparative vertebrate anatomy in the context of evolution and is essential to the student's ability to succeed and integrate content with other 400-level courses in biological sciences.

V. **Topical Course Outline**

A. Evolution and Morphology
B. Origins of the Chordates
C. Vertebrate Diversity
    1. Aquatic vertebrates: Jawless fish, Cartilagenous fish, Bony fish
    2. Terrestrial vertebrates: Amphibians and Amniotes
D. Biological Design
    1. Size and shape
    2. Biomechanics
E. Life History and Vertebrate Development
F. Integumentary system (the skin)
G. Skeletal system
    1. Skull
    2. Axial skeleton
    3. Appendicular skeleton
H. Muscular system
I. Respiratory system
J. Circulatory system
K. Digestive system

VI. **Suggested Texts**

Kardong, K.V. Vertebrates: Comparative Anatomy, Function, Evolution. New York, NY: McGraw Hill; 2012.

VII. Bibliography

Pough, F.H., C.M. Janis, and J.B. Heiser. Vertebrate Life. Boston, MA: Pearson Education; 2013.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A488	N/A	4	(2+4)

6. Complete Course Title
Experiential Learning: Developmental Biology
EL: Developmental Biology
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☒ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☐ Course Number
- ☒ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
An in depth study of the molecular and cellular principles which underlie the development of tissues and organ systems in animals, including classical embryology through utilization of numerous laboratory techniques within an authentic experiential learning environment.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
BIOL A252 with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The title, description and contact hours are being updated to reflect course design and content. As part of our overall curriculum revision, which seeks to align our degree with the core concepts and competencies in Vision and Change in Undergraduate Biology Eduction (National Science Foundation and American Association for the Advancement of Science), this course will become part of our rotation of upper division electives in molecular biology. It is being revised as an experiential learning course which combines conceptual theory and an authentic laboratory experience into a single course.

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)		☐ Approved ☐ Disapproved	Dean/Director of School/College Date
☐ Approved ☐ Disapproved	Department Chair Date	☐ Approved ☐ Disapproved	Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved	College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved	Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College: College of Arts and Sciences
B. Course Prefix: BIOL
C. Course Number: A488
D. Number of Credits: 4
E. Contact Hours: 2+4
F. Course Title: Experiential Learning: Developmental Biology
G. Grading Basis: A-F
H. Implementation Date: Fall 2015
I. Cross-listed/Stacked: N/A
J. Course Description: An in depth study of the molecular and cellular principles which underlie the development of tissues and organ systems in animals, including classical embryology through utilization of numerous laboratory techniques within an authentic experiential learning environment.
K. Course Prerequisites: BIOL A252 with minimum grade of C.
L. Course Co-requisites: N/A
M. Other Restrictions: N/A
N. Registration Restrictions: None
O. Course Fees: Yes

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:
1. Explain and provide a framework for understanding the principles and key concepts of development, and describe the process.
2. Provide hands-on examples by which genes in the fertilized egg control cell behavior in the embryo to determine its pattern, form and behavior.
3. Discuss the latest research findings relevant to embryogenesis and how genes and epigenetics control cell behavior and development.
4. Train students in classical histology and in the latest research techniques in developmental biology.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes: Upon completion of this course, the student will be able to:	Assessment Measures
1. Illustrate the fundamental concepts of development in animals.	In class discussions, written assignments
2. Evaluate the mechanisms by which gene expression controls specific aspects of development in different model organisms.	Hands-on experiential learning including mating/fertilization, developmental staging, and RNA interference and analysis; written lab reports; in-class discussions
3. Analyze data presented in the primary literature on developmental biology.	Presentations, in class discussions

4. Formulate and test hypotheses regarding the role of specific genes or epigenetic effects on development.	Experimental design and implementation, data analysis, written assignment, in class discussion

IV. Course Level Justification

This course is designed for Biological and Natural Sciences majors as an elective undergraduate course comparable to 400-level developmental biology courses offered at other universities.

V. Topical Course Outline

A. Basic concepts of development
B. Model organisms
   1. *Xenopus*, axolotls, *Drosophila*, sea urchin, chick, pig
C. Developmental genes
D. Vertebrate body axes
E. Specification of vertebrate germ layers
F. Gastrulation
G. Somite formation and patterning
H. Organizer region and neural induction
I. Maternal and early embryonic genes
J. Segmentation and homeotic genes
K. Neural tube formation, neural crest migration and other cell movements
L. Epigenetics and gene expression in development
M. Inheritance of patterns of gene expression
N. Control of gene expression
O. Organogenesis and limb formation
P. Axonal guidance and synapse formation
Q. Sex determination
R. Germ cells and fertilization
S. Regeneration
T. Growth, metamorphosis, aging
U. Evolution and development

VI. Suggested Texts

Gilbert, S.F. Developmental Biology. 10th edition. Sinauer Associates, Inc. 2013.

VII. Bibliography

Slack, J.M.W. Essential Developmental Biology. 3rd edition. Wiley-Blackwell. 2012.

Primary literature from journals such as Development, Mechanisms of Development, Science, Cell, Nature, and similar titles.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A489	N/A	3	(3+0)

6. Complete Course Title
Population Genetics and Evolutionary Processes
Popn Genetics Evol Processes
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall /9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☒ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
A comprehensive examination of the primary forces and processes involved in shaping genetic variation in natural populations (mutation, drift, selection, migration, recombination, mating patterns, population size and population subdivision), methods of measuring genetic variation in nature, and experimental tests of important ideas in population genetics.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
[BIOL A252 or BIOL A288] with minimum grade of C

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Completion of all GER Tier 1 courses is required.

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
One of the prerequisites (BIOL A288) has been renumbered through departmental curriculum revisions.

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I.	**Date of Initiation:**	Spring 2014
II.	**Curriculum Action Request**	
	A. College:	College of Arts and Sciences
	B. Course Prefix:	BIOL
	C. Course Number:	A489
	D. Number of Credits:	3
	E. Contact Hours:	3+0
	F. Course Title:	Population Genetics and Evolutionary Processes
	G. Grading Basis:	A-F
	H. Implementation Date:	Fall 2015
	I. Cross-listed/Stacked:	N/A
	J. Course Description:	A comprehensive examination of the primary forces and processes involved in shaping genetic variation in natural populations (mutation, drift, selection, migration, recombination, mating patterns, population size and population subdivision), methods of measuring genetic variation in nature, and experimental tests of important ideas in population genetics
	K. Course Prerequisites:	BIOL A252 or BIOL A288 with minimum grade of C.
	L. Course Co-requisites:	N/A
	M. Other Restrictions:	N/A
	N. Registration Restrictions:	Senior Standing
	O. Course Fees:	No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Provide a basic description of evolutionary theory and concepts
2. Build on the conceptual framework to describe how evolutionary process results in evolutionary pattern
3. Link current research on microevolutionary processes relate to observed responses to environmental and climate change
4. Emphasize the underlying quantitative processes that structure the living world, and enable students to undertake analyses and conceptualization of processes on their own
5. Provide detailed examples of modern evolutionary analysis and theory as mechanisms of biotic change and diversification
6. Relate all of the above to current issues in local and national debate on endangered populations, relevance of evolution thought to modern life (evolutionary medicine, emerging disease and virulence, endangered species, etc.)
7. Assist students to learn how to evaluate and integrate information from a variety of sources and perspectives.

B. Student Learning Outcomes and Assessment Measures

Students will be able to:	Assessment Method:
1. Read, understand, and integrate information from scientific articles with that provided in lecture and textbook assignments, and to use this information to evaluate the scientific accuracy of reports from the popular press or public science.	Exams, written assignments, in-class presentations.
2. Demonstrate an in-depth understanding of evolutionary process, microevolution mechanisms, and macroevolutionary patterns.	Exams and written assignments
3. Demontrate an in-depth understanding of evolutionary process, microevolution mechanisms, and macroevolutionary patterns.	Written assignments, in-class presentations.

IV. Course Level Justification

Students are required to learn and integrate information from a variety of scientific disciplines as it relates to applied genetics, advanced evolutionary analysis, and microevolutionary proesses; to read, understand, and apply ideas conveyed by primary scientific literature; to synthesize current biological knowledge and evolutionary theory; and to apply course materials to current problems

GER Integrative Capstone Justification:

Justifications for designating BIOL A489 Population Genetics and Evolutionary Theory as a GER Integrative Capstone course include:

1. Knowledge Integration/Interrelationships and synergy among GER disciplines: The overall theme of the course is understanding the relationship of evolutionary processes to other natural and social sciences. The course will focus on the interfaces among physical sciences (biochemistry, geological history, mathematics), biological sciences (biology, ecology, conservation, molecular biology, etc.), and the social sciences (particularly human biology, sociology, anthropology).

2. Effective Communication Skills: Course success demands effective communicaiton through essay examinations, individual classroom presentations, brief reports (oral and written) on current controversies surrounding evolution and evolutionary processes, and a final research product.

3. Critical Thinking: Students will not be able to succeed in the course unless they are are able to integrate information across disciplines, and critically evaluate the reliability of data and positions presented in lecture, texts, scientific, and popular viewpoints. Student ability to criticallly evaluate diverse material will be determined based on writing assignments, class presentations, and examinations.

4. Information Literacy: Students are expected to achieve and demonstrate computer and internet skills for acquiring information relevant to current topics in evolutionary biology. This will involve research in the primary scientific literature, and the collection of information from unpublished sources such as popular press and public statements. Students will be required to show that they can critically winnow facts and scientific content from diverse non-scientific sources.

5. Quantitative Perspectives: A critical understanding of evolutionary processes is grounded in many quantitative disciplines, including statistical analysis, applied maths (algegra, calculus, probability and combinatorics, etc.), general and advanced genetics, molecular biology. In addition, students must be able to read and interpret scientific data in graphical and tabular form, and to generate appropriate graphical displays of their own results. Microevolutionary analysis is only possible using sophisticated computer-based analytical techniques including: Bayesian analysis, Monte Carlo simulation, maximum likelihood analysis, and discrete graph analysis. Exams will specifically test on these skills.

6. Evolving realities of the 21st century: The growing understanding that evolution is a dynamic and everpresent component of modern life, particularly in the context of climate change and anthropogenic change, touches many aspects of science, policy, and social attitudes. This course will help students understand the implication of evolutionary process in a changing environment, and provide them with effective means to communicate its important and relevance for individuals and society.

V. Topical Course Outline

A. Population Structure
   1. Hardy Weinberg Equilibrium
   2. Systems of Mating
   3. Demographics
   4. Genetic Drift
   5. Neutrality and Molecular Evolution
   6. Coalescence
   7. Gene Flow & Subdivision
   8. Founders and Survivors
   9. mtDNA, Y-DNA: Separating History From Gene Flow

B. Genotype and Phenotype
   1. Quantitative Genetics: Means
   2. Quantitative Genetics: Variances
   3. The Unmeasured Genotype Approach
   4. The Measured Genotype Approach

C. Selection
   1. Measures of Fitness
   2. Constant Fitness Models
   3. Selection on Quantitative Traits and FFTNS
   4. Pleiotropy and Developmental Constraints
   5. The Shifting Balance Theory

D. Units and Targets of Selection
   1. The Unit of Selection
   2. Meiotic and Molecular Drive
   3. Sexual, Frequency and Density Dependent Selection I
   4. Asexual selection, lateral gene transfer

E. Ecological Genetics
   1. Environmental Heterogeneity
   2. Niche and Mimicry
   3. Coevolution and Host-parasite Systems
   4. Life History Evolution

F. Human Evolution and Sociobiology
   1. Hominid Evolution
   2. Altruism and Group Selection

3. Cultural Evolution

VI. Suggested Texts

Hamilton MB. Population Genetics. Wiley-Blackwell Publ. 2010.

Herron JC, Freeman S. Evolutionary Analysis, 5th Edition. Pearson Publ. 2014.

VII. Bibliography

Epperson BK. Geographical Genetics. Princeton U Press. 2003.

Erickson DL et al. 2004. Quantitative trait locus analyses and the study of evolutionary process. Molecular Ecology 13: 2505-2522.

Kimura M. 1989. The neutral theory of molecular evolution. Genome 31: 24-31.

Roff DA. 2007. A centennial celebration for quantitative genetics. Evolution 61: 1017-1032.

Wolf JB, Brodie ED, Wade MJ (Eds.). Epistasis and the Evolutionary Process. Oxford U Press. 2000.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College	1b. Division	1c. Department
AS CAS	AMSC Division of Math Science	Biological Sciences

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
BIOL	A495	N/A	1.0	(0+3)

6. Complete Course Title
Instructional Practicum: Laboratory
Instructional Practicum: Lab
Abbreviated Title for Transcript (30 character)

7. Type of Course ☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add *or* ☒ Change *or* ☐ Delete

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☒ Course Description
- ☐ Test Score Prerequisites
- ☐ Automatic Restrictions
  - ☐ Class ☐ Level
  - ☐ College ☐ Major
- ☒ Other CCG (please specify)
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☐ Course Prerequisites
- ☐ Co-requisites
- ☒ Registration Restrictions
- ☐ General Education Requirement

9. Repeat Status Yes # of Repeats 1 Max Credits 2

10. Grading Basis ☒ A-F ☐ P/NP ☐ NG

11. Implementation Date semester/year
From: Fall/2015 To: Fall/9999

12. ☐ Cross Listed with
☐ Stacked with
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course	*Date of Coordination*	*Chair/Coordinator Contacted*
1.		
2.		
3.		

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____ Date:_____

13b. Coordination Email Date: 6Jan14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 6Jan14

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description *(suggested length 20 to 50 words)*
Supervised instructional experience in a 2-hr, 3-hr or 4-hr biology laboratory or experiential learning course. Planning, presentation of material, achievement testing and correlation with lecture under the direct supervision of department faculty. Add Special Note about Repeat and mimic original description.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
N/A

16b. Co-requisite(s) *(concurrent enrollment required)*

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) *(non-codable)*
Minimum 20 credits in BIOL

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Update of CCG: modifying instructional goals and student expectations

Initiator (faculty only) Date
Khrys Duddleston
Initiator (TYPE NAME)

☐ Approved
☐ Disapproved Department Chair Date

☐ Approved
☐ Disapproved College/School Curriculum Committee Chair Date

☐ Approved
☐ Disapproved Dean/Director of School/College Date

☐ Approved
☐ Disapproved Undergraduate/Graduate Academic Board Chair Date

☐ Approved
☐ Disapproved Provost or Designee Date

University of Alaska Anchorage
College of Arts and Sciences
Course Content Guide

I. Date of Initiation: Spring 2014

II. Curriculum Action Request

A. College: College of Arts and Sciences
B. Course Prefix: BIOL
C. Course Number: A495
D. Number of Credits: 1
E. Contact Hours: 0+3
F. Course Title: Instructional Practicum: Laboratory
G. Grading Basis: A-F
H. Implementation Date: Fall 2015
I. Cross-listed/Stacked: N/A
J. Course Description: Supervised instructional experience in a 2-hr, 3-hr or 4-hr biology laboratory or experiential learning course. Planning, presentation of material, achievement testing and correlation with lecture under the direct supervision of department faculty. Special Note : May be repeated once for credit.
K. Course Prerequisites: N/A
L. Course Co-requisites: N/A
M. Other Restrictions: N/A
N. Registration Restrictions: Minimum 20 credits in BIOL
O. Course Fees: No

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. The instructor will:

1. Mentor students in learning how to teach effectively
2. Model appropriate instructor/student relationship and instructor ethics in and out of the classroom
3. Actively guide students in pedagogical methods and techniques to assist and answer student questions
4. Provide supervisory coordination to maintain the coordinated delivery of practical and lecture materials and presentations

B. Student Learning Outcomes and Assessment Measures

Students will be able to:	Assessment Method:
1. Apply basic pedagogical skills by delivering instructional presentations in an experiential learning or laboratory setting.	Presentations, assisting instructor and students
2. Apply theoretical and practical teaching tools to organize, plan, present, demonstrate, assess and nurture student learning in an experiential learning or laboratory setting.	Presentations, assisting instructor and students

3. Effectively communicate skills in an experiential learning or laboratory setting.	Presentations, assisting instructor and students

IV. Course Level Justification

Designed for Biological and Natural Sciences majors and as elective undergraduate course comparable to 400-level teaching practica offered at other universities. Enables students to plan and present materials, conduct exams and quizzes, and correlate laboratory presentations with lecture material under direct supervision and mentoring of department faculty.

V. Topical Course Outline

A. Student will attend all weekly laboratory sessions for the course assigned
B. Student will attend all weekly planning meetings
C. Student will assist course enrollees with experiments and answer questions during class
D. Student will prepare and deliver 2 separate laboratory/experiential learning lead-ins
    1. Student will help prepare quizzes, exam questions and homework questions associated with the 2 laboratory lead-ins they prepare
    2. Student will help grade quizzes, exam questions and homework questions associated with the 2 laboratory lead-ins they prepare

VI. Suggested Texts

The text will vary depending on the assigned class for instructor practicum.

VII. Bibliography

Handelsman, J., S. Miller, C. Pfund. Scientific Teaching. W.H. Freeman and Co. NY. 2007.

McKeachie, Wilbert J. McKeachie's Teaching Tips: Strategies, Research and Theory for College and University Teachers. 10th ed. Houghton Mifflin Co. NY. 1999.

8Jan14

To: CAS Course and Curriculum Committee
Undergraduate Academic Board

From: Khrys Duddleston, Chair
Department of Biological Sciences Curriculum Committee

RE: Changes to the B.A. in Biological Sciences Degree

The Department of Biological Sciences proposes the following changes to the B.A. in Biological Sciences Degree

1. Changes to the core course requirements
2. Organize upper division electives into five areas
3. Updating upper division course offerings

These changes are intended to ensure that core course requirements prepare students for upper division electives as well as improve the depth and breadth of exposure to sub disciplines within the biological sciences. The purpose for making these changes is to improve the time to completion of the degree and align our curriculum with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education: A Call to Action (2013), a report of a national conference organized by the American Association for the Advancement of Science with support from the National Science Foundation.

Please contact me if you have any additional questions.

Program/Prefix Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

1a. School or College	1b. Department
AS CAS	Biological Sciences

2. Complete Program Title/Prefix
Bachelor of Arts, Biological Sciences

3. Type of Program

Choose one from the appropriate drop down menu: Undergraduate: Bachelor of Arts or Graduate: CHOOSE ONE

This program is a Gainful Employment Program: ☐ Yes or ☒ No

4. Type of Action:

PROGRAM	PREFIX
☐ Add	☐ Add
☒ Change	☐ Change
☐ Delete	☐ Inactivate

5. Implementation Date (semester/year)
From: Fall/2015 To: Fall/9999

6a. Coordination with Affected Units Department, School, or College: CAS

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____
Date:_____

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu) Date: 6Jan14

6c. Coordination with Library Liaison Date: 6Jan14

7. Title and Program Description - Please attach the following:

☒ Cover Memo ☒ Catalog Copy in Word using the track changes function

8. Justification for Action
The purpose for making these changes is to improve the time to completion of the degree and align our curriculum with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education: A Call to Action (2013), a report of a national conference organized by the American Association for the Advancement of Science with support from the National Science Foundation.

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)	☐ Approved ☐ Disapproved Dean/Director of School/College Date
☐ Approved ☐ Disapproved Department Chair Date	☐ Approved ☐ Disapproved Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved Provost or Designee Date

8Jan14

To: CAS Course and Curriculum Committee
Undergraduate Academic Board

From: Khrys Duddleston, Chair
Department of Biological Sciences Curriculum Committee

RE: Changes to the B.S. in Biological Sciences Degree

The Department of Biological Sciences proposes the following changes to the B.S. in Biological Sciences Degree

1. Changes to the core course requirements
2. Organize upper division electives into five areas
3. Require students to take a minimum of three credits in four of the five areas, and a minimum of six experiential learning credits from 2 of the five areas

These changes are intended to ensure that core course requirements prepare students for upper division electives as well as improve the depth and breadth of exposure to sub disciplines within the biological sciences. The purpose for making these changes is to improve the time to completion of the degree and align our curriculum with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education: A Call to Action (2013), a report of a national conference organized by the American Association for the Advancement of Science with support from the National Science Foundation.

Please contact me if you have any additional questions.

Program/Prefix Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

1a. School or College	1b. Department
AS CAS	Biological Sciences

2. Complete Program Title/Prefix
Bachelor of Science, Biological Sciences

3. Type of Program

Choose one from the appropriate drop down menu: Undergraduate: Bachelor of Science or Graduate: CHOOSE ONE

This program is a Gainful Employment Program: ☐ Yes or ☒ No

4. Type of Action:

PROGRAM	PREFIX
☐ Add	☐ Add
☒ Change	☐ Change
☐ Delete	☐ Inactivate

5. Implementation Date (semester/year)
From: Fall/2015 To: Fall/9999

6a. Coordination with Affected Units Department, School, or College: CAS

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____
Date:_____

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu) Date: 6Jan14

6c. Coordination with Library Liaison Date: 6Jan14

7. Title and Program Description - Please attach the following:

☒ Cover Memo ☒ Catalog Copy in Word using the track changes function

8. Justification for Action
The purpose for making these changes is to improve the time to completion of the degree and align our curriculum with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education: A Call to Action (2013), a report of a national conference organized by the American Association for the Advancement of Science with support from the National Science Foundation.

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)	☐ Approved ☐ Disapproved Dean/Director of School/College Date
☐ Approved ☐ Disapproved Department Chair Date	☐ Approved ☐ Disapproved Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved Provost or Designee Date

BIOLOGICAL SCIENCES

ConocoPhillips Integrated Sciences Building (CPSB), Room 101P, (907) 786-4770
www.uaa.alaska.edu/biology

Biology is the science concerned with the study of living organisms. It encompasses a vast range of biological disciplines, from the study of microbes and molecular biology to the study of plants, animals and the environment. The undergraduate program in the Biological Sciences includes courses that provide students with a broad understanding of both traditional and modern biological sciences. These courses are suitable as preparation for professional degrees, teaching, or careers in government or industry. Both the Bachelor of Arts and the Bachelor of Science degrees are available for undergraduates. A Master of Science degree program in Biological Sciences as well as a joint UAA-UAF Doctor of Science degree program is available for students already holding a baccalaureate degree.

A program of study in the biological sciences requires completion of a basic science core curriculum in the chemical, physical and mathematical sciences as well as required and elective courses in the biological sciences. A degree in the biological sciences prepares students who wish to pursue careers in medicine, dentistry, veterinary medicine, ecology and the environmental sciences in the private or public sector, or who wish to attend graduate school. Students are strongly encouraged to consult with their academic advisors within the Department of Biological Sciences to determine which electives best suit their programmatic needs and career requirements.

The Bachelor of Arts and the Bachelor of Science degree programs require a total of 120-125 credits for graduation and can be completed in four years by students who have had adequate high school preparation in math and sciences. Refer to the beginning of this chapter for recommended high school courses.

Program Student Learning Outcomes

It is expected that graduates of the Biological Sciences program will:

1. Demonstrate an understanding of the core concepts in the biological sciences: evolution; structure and function relationships; information flow, exchange and storage; transformation of energy and matter
2. Apply the process of science and construct knowledge through observations, experimentation, quantitative reasoning and hypothesis testing
3. Read, analyze and synthesize primary literature, and communicate scientific concepts and data in written and oral form

Community Service Courses

The department offers a wide range of community service courses as a service to the people in the Anchorage area and extended campuses who wish to become more knowledgeable about the science of biology and how it relates to them. Unless noted otherwise in the course description, community service courses do not satisfy either core requirements or elective credit toward any degree programs in the biological sciences. All are offered as demand warrants.

BIOL A074	Field Natural History
BIOL A075	Local Flora
BIOL A100	Human Biology
BIOL A124	Biota of Alaska: Selected Topics
BIOL A126	Birds in Field and Laboratory

Departmental Honors in Biology

Undergraduate Biological Science majors may be recognized for exceptional performance by earning departmental honors in Biology. In order to receive honors in biology, a student must meet each of the following requirements:

1. Meet the requirements for Graduation with Honors as listed in Chapter 7.
2. Meet the requirements for a BA/BS degree in Biological Sciences.
3. Earn a grade point average of 3.50 or above in the major requirements.

4. During the senior year of their academic program, the student must gain faculty approval for and complete, with a grade of B or better, a senior thesis research project, with enrollment in BIOL A499 Senior Thesis. Biological Science faculty members must approve the project proposal and final written report.

Bachelor of Arts, Biological Sciences

Admission Requirements

Complete the Admission to Baccalaureate Programs Requirements in Chapter 7.

Academic Progress

To graduate with a BA in Biological Sciences, the student must complete all courses covered under Major Requirements for a BA in Biological Sciences with a grade of C or better. All prerequisites for Biology courses must be completed with a grade of C or better. Students who audit, or are unable to earn a grade of C or better in, a lower-division (100 or 200 level) course in the Department of Biological Sciences (BIOL) may repeat the course two additional times on a space available basis. Students who audit, or are unable to earn a grade of C or better in, an upper-division (300 or 400 level) course in the Department of Biological Sciences may repeat the course one additional time on a space available basis. Students repeating a course in the Department of Biological Sciences are required to complete all components of that course during the semester in which the course is retaken. When repeating a course with a linked lecture and laboratory component, both components must be repeated. Students enrolled in a laboratory or Experiential Learning course in the Department of Biological Sciences must attend the lab or course the first week of class or they may be administratively dropped.

Graduation Requirements

Students must complete the following graduation requirements:

A. General University Requirements

Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

B. General Education Requirements

Complete the General Education Requirements for Baccalaureate Degrees listed at the beginning of this chapter.

C. College of Arts and Sciences Requirements

Complete the College of Arts and Sciences Requirements listed at the beginning of the CAS section.

D. Major Requirements

1. Complete these required core courses (34-35 credits):

BIOL A108	Principles and Methods in Biology	6
BIOL A242	Fundamentals of Cell Biology	3
BIOL A252	Principles of Genetics	3
BIOL A271	Principles of Ecology	3
BIOL A288	Principles of Evolution	3
BIOL A243	Experiential Learning: Genetics and Cell Biology	4
	or	
BIOL A273	Experiential Learning: Ecology and Evolution	4
BIOL A492	Undergraduate Seminar	1
CHEM A105	General Chemistry I	3
CHEM A105L	General Chemistry I Laboratory	1
CHEM A106	General Chemistry II	3
CHEM A106L	General Chemistry II Laboratory	1
STAT A252	Elementary Statistics (3)	3-4

or

STAT A253 Applied Statistics for the Sciences (4)

or

STAT A307 Probability and Statistics (4)

2. Complete 18-19 credits of upper division program electives from the following areas.
   a. A minimum of 3 credits must come from each of 4 of the 5 areas.*
   b. A minimum of 6 credits must be Experiential Learning from 2 areas**. 18-19

Genetics, Cellular and Molecular Biology

BIOL A340 Microbial Biology (3)
BIOL A451 Microbial Biotechnology (3)
BIOL A452 Human Genome (3)
BIOL A461 Molecular Biology (3)
BIOL A462 Virology (3)
BIOL A463 Molecular Biology of Cancer (3)
BIOL A464 Metals in Biology (3)
BIOL A471 Immunology (3)

BIOL A342 Experiential Learning: Microbial Biology (4)
BIOL A403 Experiential Learning: Microscopical Tissue Techniques (6)
BIOL A454 Experiential Learning: Microbial Biotechnology (4)
BIOL A455 Experiential Learning: Bioinformatics (4)
BIOL A465 Experiential Learning: Molecular Biology (4)
BIOL A488 Experiential Learning: Developmental Biology (4)

Ecology and Evolution

BIOL A365 Astrobiology (3)
BIOL A430 Marine Mammals and Seabirds (3)
BIOL A441 Animal Behavior (3)
BIOL A445 Plant-Herbivore Ecology (4)
BIOL A450 Microbial Ecology (3)
BIOL A472 Biogeography (3)
BIOL A473 Conservation Biology (3)
BIOL A474 Ecotoxicology (3)
BIOL A475 Fish Ecology (3)
BIOL A476 Wildlife Population Dynamics and Management (3)
BIOL A477 Tundra and Taiga Ecosystems (3)
BIOL A478 Biological Oceanography (3)
BIOL A479 Physiological Plant Ecology (3)
BIOL A480 Ecological and Conservation Genetics (3)
BIOL A481 Marine Biology (3)
BIOL A482 Spatial Ecology (3)
BIOL A483 Exploration Ecology (2)
BIOL A486 Evolutionary Ecology (3)
BIOL A489 Population Genetics and Evolutionary Processes (3)

BIOL A442 Experiential Learning: Animal Behavior (3)
BIOL A453 Experiential Learning: Microbial Ecology (4)
BIOL A484 Experiential Learning: Exploration Ecology Field Study (4)

Diversity and Organismal Biology

BIOL A320	Vertebrate Biology (3)
BIOL A330	Plant Biology (3)
BIOL A340	Microbial Biology (3)
BIOL A423	Ichthyology (3)
BIOL A427	Marine Invertebrate Biology (3)
BIOL A430	Marine Mammals and Seabirds (3)
BIOL A431	Plant Diversity and Evolution (3)
BIOL A487	Comparative Anatomy of Vertebrates (3)

BIOL A321	Experiential Learning: Vertebrate Biology (2)
BIOL A332	Experiential Learning: Plant Biology (2)
BIOL A342	Experiential Learning: Microbial Biology (4)

Physiology

BIOL A310	Principles of Animal Physiology (3)
BIOL A316	Principles of Plant Physiology (3)
BIOL A412	Behavioral Endocrinology (3)
BIOL A413	Neurophysiology (3)
BIOL A414	Chronobiology (3)
BIOL A415	Comparative Animal Physiology (3)
BIOL A416	Exercise Physiology (3)
BIOL A418	Fish Physiology (3)
BIOL A479	Physiological Plant Ecology (3)
BIOL A487	Comparative Anatomy of Vertebrates (3)

Additional Upper Division Electives

BIOL A456	Nonlinear Dynamics and Chaos (3)
BIOL A490	Selected Lecture Topics in Biology (1-3)
BIOL A495	Instructional Practicum: Laboratory (1)
BIOL A497	Independent Study in Biology (1-12)
BIOL A498	Individual Research (1-6)
BIOL A499	Senior Thesis (3)
BIOL A490L	Selected Laboratory Topics in Biology (1-3)

BIOL A406	Experiential Learning: Biostatistics (4)
BIOL A408	Experiential Learning: Scanning Electron Microscopy (SEM)

**Several courses are listed under more than one area. Each course can only count toward the credit requirement in one area.*

***BIOL A498 credits may not be counted toward the Experiential Learning minimum requirement*

***BIOL A490L credits may be counted toward the Experiential Learning minimum requirement*

3. It is recommended that students complete 8 credits from the following: 8

GEOL A111	Physical Geology (4)
GEOL A221	Historical Geology (4)
	or
PHYS A123	Basic Physics I (3)
	and
PHYS A123L	Basic Physics I Laboratory (1)
PHYS A124	Basic Physics II (3)

	and
PHYS A124L	Basic Physics II Laboratory (1)
	or
PHYS A211	General Physics I (3)
	and
PHYS A211L	General Physics I Laboratory (1)
PHYS A212	General Physics II (3)
	and
PHYS A212L	General Physics II Laboratory (1)

4. A total of 124 credits is required for the degree, 42 credits of which must be upper division.

Bachelor of Science, Biological Sciences

The Bachelor of Science degree includes a single core program of coursework with electives selected from 4 sub-disciplines within the biological sciences. A wide selection of electives is available to all students, including courses offered under BIOL A490, which is a selected topics course. It is imperative that students consult their academic advisors within the Department of Biological Sciences to determine which electives are most appropriate to their career interests. Some of these elective courses are offered periodically, depending on demand. Refer to course descriptions to identify these courses.

Admission Requirements

Complete the Admission to Baccalaureate Programs Requirements in Chapter 7.

Academic Progress

To graduate with a BS in Biological Sciences, the student must complete all courses covered under Major Requirements for a BS in Biological Sciences with a grade of C or better. All prerequisites for Biology courses must be completed with a grade of C or better. Students who audit, or are unable to earn a grade of C or better in, a lower-division (100 or 200 level) course in the Department of Biological Sciences (BIOL) may repeat the course two additional times on a space available basis. Students who audit, or are unable to earn a grade of C or better in, an upper-division (300 or 400 level) course in the Department of Biological Sciences may repeat the course one additional time on a space available basis. Students repeating a course in the Department of Biological Sciences are required to complete all components of that course during the semester in which the course is retaken. When repeating a course with a linked lecture and laboratory component, both components must be repeated. Students enrolled in a laboratory or Experiential Learning course in the Department of Biological Sciences must attend the lab or course the first week of class or they may be administratively dropped.

Graduation Requirements

Students must complete the following graduation requirements:

A. General University Requirements

Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

B. General Education Requirements

Complete the General Education Requirements for Baccalaureate Degrees listed at the beginning of this chapter.

C. College of Arts and Sciences Requirements

Complete the College of Arts and Sciences Requirements listed at the beginning of the CAS section.

D. Major Requirements

1. Some major requirements may also be used to satisfy the College of Arts and Sciences BS requirements.
2. Complete these required support courses (36 credits):

CHEM A105	General Chemistry I	3
CHEM A105L	General Chemistry I Laboratory	1
CHEM A106	General Chemistry II	3

CHEM A106L	General Chemistry II Laboratory	1
CHEM A321	Organic Chemistry I	3
CHEM A322	Organic Chemistry II	3
CHEM A323L	Organic Chemistry Laboratory	2
MATH A200	Calculus I	4
MATH A201	Calculus II	4
PHYS A123	Basic Physics I (3)	8
PHYS A123L	Basic Physics I Laboratory (1)	
	and	
PHYS A124	Basic Physics II (3)	
PHYS A124L	Basic Physics II Laboratory (1)	
	or	
PHYS A211	General Physics I (3)	
PHYS A211L	General Physics I Laboratory (1)	
	and	
PHYS A212	General Physics II (3)	
PHYS A212L	General Physics II Laboratory (1)	
STAT A253	Applied Statistics for the Sciences (4)	4
	or	
STAT A307	Probability and Statistics (4)	

3. Complete Biological Sciences core courses (22 credits):

BIOL A108	Principles and Methods in Biology	6
BIOL A242	Fundamentals of Cell Biology	3
BIOL A252	Principles of Genetics	3
BIOL A271	Principles of Ecology	3
BIOL A288	Principles of Evolution	3
BIOL A243	Experiential Learning: Genetics and Cell Biology	4
	or	
BIOL A273	Experiential Learning: Ecology and Evolution	4
BIOL A492	Undergraduate Seminar	1

4. Complete at least 24 credits of upper division program electives from the following areas.
   a. A minimum of 3 credits must come from each of 4 of the five 5 areas*.
   b. A minimum of 6 credits must be Experiential Learning from 2 areas**. 24

Genetics, Cellular and Molecular Biology

BIOL A340	Microbial Biology (3)
BIOL A451	Microbial Biotechnology (3)
BIOL A452	Human Genome (3)
BIOL A461	Molecular Biology (3)
BIOL A462	Virology (3)
BIOL A463	Molecular Biology of Cancer (3)
BIOL A464	Metals in Biology (3)
BIOL A471	Immunology (3)

BIOL A342	Experiential Learning: Microbial Biology (4)
BIOL A403	Experiential Learning: Microscopical Tissue Techniques (6)

BIOL A454 Experiential Learning: Microbial Biotechnology (4)
BIOL A455 Experiential Learning: Bioinformatics (4)
BIOL A465 Experiential Learning: Molecular Biology (4)
BIOL A488 Experiential Learning: Developmental Biology (4)

Ecology and Evolution

BIOL A365 Astrobiology (3)
BIOL A430 Marine Mammals and Seabirds (3)
BIOL A441 Animal Behavior (3)
BIOL A445 Plant-Herbivore Ecology (4)
BIOL A450 Microbial Ecology (3)
BIOL A472 Biogeography (3)
BIOL A473 Conservation Biology (3)
BIOL A474 Ecotoxicology (3)
BIOL A475 Fish Ecology (3)
BIOL A476 Wildlife Population Dynamics and Management (3)
BIOL A477 Tundra and Taiga Ecosystems (3)
BIOL A478 Biological Oceanography (3)
BIOL A479 Physiological Plant Ecology (3)
BIOL A480 Ecological and Conservation Genetics (3)
BIOL A481 Marine Biology (3)
BIOL A482 Spatial Ecology (3)
BIOL A483 Exploration Ecology (2)
BIOL A486 Evolutionary Ecology (3)
BIOL A489 Population Genetics and Evolutionary Processes (3)

BIOL A442 Experiential Learning: Animal Behavior (3)
BIOL A453 Experiential Learning: Microbial Ecology (4)
BIOL A484 Experiential Learning: Exploration Ecology Field Study (4)

Diversity and Organismal Biology

BIOL A320 Vertebrate Biology (3)
BIOL A330 Plant Biology (3)
BIOL A340 Microbial Biology (3)
BIOL A423 Ichthyology (3)
BIOL A427 Marine Invertebrate Biology (3)
BIOL A430 Marine Mammals and Seabirds (3)
BIOL A431 Plant Diversity and Evolution (3)
BIOL A487 Comparative Anatomy of Vertebrates (3)

BIOL A321 Experiential Learning: Vertebrate Biology (2)
BIOL A332 Experiential Learning: Plant Biology (2)
BIOL A342 Experiential Learning: Microbial Biology (4)

Physiology

BIOL A310 Principles of Animal Physiology (3)
BIOL A316 Principles of Plant Physiology (3)
BIOL A412 Behavioral Endocrinology (3)
BIOL A413 Neurophysiology (3)
BIOL A414 Chronobiology (3)

BIOL A415	Comparative Animal Physiology (3)
BIOL A416	Exercise Physiology (3)
BIOL A418	Fish Physiology (3)
BIOL A479	Physiological Plant Ecology (3)
BIOL A487	Comparative Anatomy of Vertebrates (3)

Additional Upper Division Electives

BIOL A456	Nonlinear Dynamics and Chaos (3)
BIOL A490	Selected Lecture Topics in Biology (1-3)
BIOL A495	Instructional Practicum: Laboratory (1)
BIOL A497	Independent Study in Biology (1-12)
BIOL A498	Individual Research (1-6)
BIOL A499	Senior Thesis (3)
BIOL A490L	Selected Laboratory Topics in Biology (1-3)
CHEM A441	Principles of Biochemistry I (3)
CHEM A442	Principles of Biochemistry II (3)
CHEM A443	Biochemistry Laboratory (2)

BIOL A406	Experiential Learning: Biostatistics (4)
BIOL A408	Experiential Learning: Scanning Electron Microscopy (SEM)

**Several courses are listed under more than one area. Each course can only count toward the credit requirement in one area.*

***BIOL A498 credits may not be counted toward the Experiential Learning minimum requirement*

***BIOL A490L credits may be counted toward the Experiential Learning minimum requirement*

5. A total of 122-125 credits is required for the degree, 42 credits of which must be upper division.

Bachelor of Science, Natural Sciences

The Department of Biological Sciences also oversees the Bachelor of Science in Natural Sciences. This curriculum emphasizes the interrelationships among the sciences. A program of study in the Natural Sciences requires that students select an option within the degree, and complete all courses required within the option, as well as sufficient science elective courses to meet minimum unit requirements for graduation. Students accepted into this flexible degree program select one of three options: the General Sciences Option is designed for students who are interested in understanding the interrelationships among various scientific fields, or in teaching science at the secondary level. The Pre-Health Professions Option is designed to meet the admission requirements of specific professional schools in medicine, dentistry, and veterinary medicine. The Environmental Sciences Option is designed to prepare students for graduate school or for employment in the private or public sector.

For a complete program description see the Natural Sciences section of this chapter.

Minor, Biological Sciences

Students majoring in another subject who wish to minor in Biological Sciences must complete the following requirements. A total of 28 credits is required for the minor, 12 of which must be upper division.

BIOL A108	Principles and Methods in Biology	6
BIOL A242	Fundamentals of Cell Biology	3
BIOL A252	Principles of Genetics	3
BIOL A288	Principles of Evolution	3
Upper division Biological Sciences electives		12

FACULTY

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BIOLOGICAL SCIENCES

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www.uaa.alaska.edu/biology

Biology is the science concerned with the study of living organisms. It encompasses a vast range of biological disciplines, from the study of microbes and molecular biology to the study of plants, animals and the environment. The undergraduate program in the Biological Sciences includes courses that provide students with a broad understanding of both traditional and modern biological sciences. These courses are suitable as preparation for professional degrees, teaching, or careers in government or industry. Both the Bachelor of Arts and the Bachelor of Science degrees are available for undergraduates. A Master of Science degree program in Biological Sciences as well as a joint UAA-UAF Doctor of Science degree program is available for students already holding a baccalaureate degree.

A program of study in the biological sciences requires completion of a basic science core curriculum in the chemical, physical and mathematical sciences as well as required and elective courses in the biological sciences. A degree in the biological sciences prepares students who wish to ~~Two general divisions are recognized in the biology program: the cell-molecular and the organismal-ecology-evolution areas. The cell-molecular area focuses on pre-professional sciences for students wishing to~~ pursue careers in medicine, dentistry, ~~and~~ veterinary medicine, ecology and the environmental sciences in the private or public sector, or who wish to attend graduate school. ~~The organismal-ecology-evolution area is a more diversified curriculum emphasizing environmental, organismal, evolutionary, and general biological sciences preparatory for graduate school or for employment in the private or public sector.~~ Students are strongly encouraged to consult with their academic advisors within the Department of Biological Sciences to determine which electives best suit their programmatic needs and career requirements.

The Bachelor of Arts and the Bachelor of Science degree programs require a total of 12~~4~~0-125 credits for graduation and can be completed in four years by students who have had adequate high school preparation in math and sciences. Refer to the beginning of this chapter for recommended high school courses.

Program Student Learning Outcomes

It is expected that graduates of the Biological Sciences program will: ~~have the ability to:~~

~~1. Demonstrate an understanding of Accept challenges and think through problems until solutions are derived and effectively communicate the solutions to supervisors.~~

1. ~~Design and conduct projects that include fieldwork, laboratory analyses, and interpretation in the discipline.~~the core concepts in the biological sciences: evolution; structure and function relationships; information flow, exchange and storage; transformation of energy and matter
2. Apply the process of science and construct knowledge through observations, experimentation, quantitative reasoning and hypothesis testing
~~2.~~3. Read, analyze and synthesize primary literature, and communicate scientific concepts and data in written and oral form

Community Service Courses

The department offers a wide range of community service courses as a service to the people in the Anchorage area and extended campuses who wish to become more knowledgeable about the science of biology and how it relates to them. Unless noted otherwise in the course description, community service courses do not satisfy either core requirements or elective credit toward any degree programs in the biological sciences. All are offered as demand warrants.

BIOL A074	Field Natural History
BIOL A075	Local Flora
BIOL A100	Human Biology
BIOL A124	Biota of Alaska: Selected Topics
BIOL A126	Birds in Field and Laboratory

Departmental Honors in Biology

Undergraduate Biological Science majors may be recognized for exceptional performance by earning departmental honors in Biology. In order to receive honors in biology, a student must meet each of the following requirements:

1. Meet the requirements for Graduation with Honors as listed in Chapter 7.
2. Meet the requirements for a BA/BS degree in Biological Sciences.
3. Earn a grade point average of 3.50 or above in the major requirements.
4. During the senior year of their academic program, the student must gain faculty approval for and complete, with a grade of B or better, a senior thesis research project, with enrollment in BIOL A499 Senior Thesis. Biological Science faculty members must approve the project proposal and final written report.

Bachelor of Arts, Biological Sciences

Admission Requirements

Complete the Admission to Baccalaureate Programs Requirements in Chapter 7.

Academic Progress

To graduate with a BA in Biological Sciences, the student must complete all courses covered under Major Requirements for a BA in Biological Sciences with a grade of C or better. All prerequisites for Biology courses must be completed with a grade of C or better. Students who audit, or are unable to earn a grade of C or better in, a lower-division (100 or 200 level) course in the Department of Biological Sciences (BIOL) may repeat the course two additional times on a space available basis. Students who audit, or are unable to earn a grade of C or better in, an upper-division (300 or 400 level) course in the Department of Biological Sciences may repeat the course one additional time on a space available basis. Students repeating a course in the Department of Biological Sciences are required to complete all components of that course during the semester in which the course is retaken. When repeating a course with a linked lecture and laboratory component, both components must be repeated. Students enrolled in a laboratory or Experiential Learning course in the Department of Biological Sciences must attend the lab or course the first week of class or they may be administratively dropped.

Graduation Requirements

Students must complete the following graduation requirements:

A. General University Requirements

Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

B. General Education Requirements

Complete the General Education Requirements for Baccalaureate Degrees listed at the beginning of this chapter.

C. College of Arts and Sciences Requirements

Complete the College of Arts and Sciences Requirements listed at the beginning of the CAS section.

D. Major Requirements

1. Complete these required core courses (~~35~~34 ~~36~~ 35 credits):

~~BIOL A115~~	~~Fundamentals of Biology I~~	~~4~~
~~BIOL A116~~	~~Fundamentals of Biology II~~	~~4~~
BIOL A108	Principles and Methods in Biology	6
BIOL A242	Fundamentals of Cell Biology	~~4~~3
BIOL A252	Principles of Genetics	~~4~~3
BIOL A271	Principles of Ecology	~~4~~3
BIOL ~~A308~~A288	Principles of Evolution	3
BIOL A243	Experiential Learning: Genetics and Cell Biology	4
	or	

BIOL A273	Experiential Learning: Ecology and Evolution	4
BIOL A492	Undergraduate Seminar	1
CHEM A105	General Chemistry I	3
CHEM A105L	General Chemistry I Laboratory	1
CHEM A106	General Chemistry II	3
CHEM A106L	General Chemistry II Laboratory	1
STAT A252	Elementary Statistics (3)	3-4
	or	
STAT A253	Applied Statistics for the Sciences (4)	
	or	
STAT A307	Probability and Statistics (4)	

2. Complete ~~15~~18 ~~17~~ 19 credits of upper division program electives from the following ~~four~~ areas.

a. ~~At least~~A minimum of ~~one~~ 3 credits ~~course~~ must come from each of 4 of the 5 areas.*

~~2.~~b. A minimum of 6 credits must be Experiential Learning from 2 areas**. 18-19

Genetics, Cellular and- Molecular Biology

BIOL A340	~~General Microbiology~~Microbial Biology (~~5~~3)
BIOL A451	~~Applied Microbiology~~Microbial Biotechnology (3)
BIOL A452	Human Genome (3)
~~BIOL A452~~	~~Human Genome (3)~~
BIOL A461	Molecular Biology (3)
BIOL A462	Virology (3)
BIOL A463	Molecular Biology of Cancer (3)
BIOL A464	Metals in Biology (3)
~~BIOL A461L~~	~~Molecular Biology Laboratory (3)~~
BIOL~~/~~	
~~CHEM~~ A471	~~Immunochemistry~~ Immunology (~~4~~3)

BIOL A342	Experiential Learning: Microbial Biology (4)
BIOL A403	Experiential Learning: Microscopical Tissue Techniques (6)
BIOL A454	Experiential Learning: Microbial Biotechnology (4)
BIOL A455	Experiential Learning: Bioinformatics (4)
BIOL A465	Experiential Learning: Molecular Biology (4)

~~BIOL A403~~	~~Microtechnique (4)~~
BIOL A488	Experiential Learning: Developmental Biology (4)

Ecology and -Evolution

BIOL A365	Astrobiology (3)
BIOL A430	Marine Mammals and Seabirds (3)
BIOL A441	Animal Behavior (3)
BIOL A445	Plant-Herbivore Ecology (4)
BIOL A450	Microbial Ecology (3)
BIOL ~~A309~~A472	Biogeography (3)
BIOL ~~A373~~A473	Conservation Biology (3)
BIOL A474	Ecotoxicology (3)
BIOL A475	Fish Ecology (3)
BIOL A476	Wildlife Population Dynamics and Management (3)

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BIOL A477 Tundra and Taiga Ecosystems (3)
BIOL A478 Biological Oceanography (3)
BIOL A479 Physiological Plant Ecology (3)
BIOL A480 Ecological and Conservation Genetics (3)
BIOL ~~A378~~A481 Marine Biology (3)
BIOL A482 Spatial Ecology (3)
BIOL A483 Exploration Ecology (2)
BIOL A486 Evolutionary Ecology (3)
~~BIOL A430 Marine Mammal Biology (4)~~
~~BIOL A441 Animal Behavior (4)~~
~~BIOL A445 Plant Herbivore Ecology (4)~~
~~BIOL A450 Microbial Ecology (3)~~
~~BIOL A477 Tundra and Taiga Ecosystems (3)~~
~~BIOL A478 Biological Oceanography (4)~~
~~BIOL A479 Physiological Plant Ecology (3)~~
BIOL A489 Population Genetics and Evolutionary Processes (3)

BIOL A442Experiential Learning: Animal Behavior (3)
BIOL A453 Experiential Learning: Microbial Ecology (4)
BIOL A484 Experiential Learning: Exploration Ecology Field Study (4)

Diversity and Organismal Biology

BIOL A320 Vertebrate Biology (3)
BIOL A330 Plant Biology (3)
BIOL A340 Microbial Biology (3)
BIOL A423 Ichthyology (3)
BIOL A427 Marine Invertebrate Biology (3)
BIOL A430 Marine Mammals and Seabirds (3)
BIOL ~~A331~~A431~~Systematic Botany (4)~~Plant Diversity and Evolution (3)
~~BIOL A333 Biology of Non-Vascular Plants (4)~~
~~BIOL A334 Biology of Vascular Plants (4)~~
~~BIOL A340 General Microbiology (5)~~
~~BIOL A423 Ichthyology (4)~~
~~BIOL A425 Mammalogy (3)~~
~~BIOL A426 Ornithology (4)~~
~~BIOL A427 Invertebrate Zoology (4)~~
~~BIOL A430 Marine Mammal Biology (4)~~BIOL A487Comparative Anatomy of Vertebrates (3)

BIOL A321Experiential Learning: Vertebrate Biology (2)
BIOL A332 Experiential Learning: Plant Biology (2)
BIOL A342 Experiential Learning: Microbial Biology (4)

Physiology

BIOL A310 Principles of Animal Physiology (~~4~~3)
BIOL A316 ~~Introduction~~ Principles of~~to~~ Plant Physiology (3)
BIOL A412 Behavioral Endocrinology (3)
BIOL A413 Neurophysiology (3)

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BIOL A414 Chronobiology (3)
BIOL A415 Comparative Animal Physiology (3)
BIOL A416 Exercise Physiology (3)
BIOL A418 Fish Physiology (3)
BIOL A479 Physiological Plant Ecology (3)

BIOL A487 Comparative Anatomy of Vertebrates (3)

Additional Upper Division Electives~~4)~~

~~ASTR/~~
~~BIOL A365 Astrobiology (3)~~
BIOL~~/CHEM/~~
~~PHYS~~ A456 Nonlinear Dynamics and Chaos (3)
BIOL A490 Selected Lecture Topics in Biology (1-3)
~~BIOL A490L Selected Laboratory Topics in Biology (1-3)~~
BIOL A495 Instructional Practicum: Laboratory (1)
BIOL A497 Independent Study in Biology (1-12)
BIOL A498 Individual Research (1-6)
BIOL A499 Senior Thesis (3)
BIOL A490L Selected Laboratory Topics in Biology (1-3)

BIOL A406 Experiential Learning: Biostatistics (4)
BIOL A408 Experiential Learning: Scanning Electron Microscopy (SEM) (6)

**Several courses are listed under more than one area. Each course can only count toward the credit requirement in one area.*
***BIOL A498 credits may not be counted toward the Experiential Learning minimum requirement*
***BIOL A490L credits may be counted toward the Experiential Learning minimum requirement*

~~3. The following may be taken for upper division elective credit in addition to the 15-17 credits required as stated in 2 above:~~
~~ASTR/~~
~~BIOL A365 Astrobiology (3)~~
~~BIOL/CHEM/~~
~~PHYS A456 Nonlinear Dynamics and Chaos (3)~~
~~BIOL A490 Selected Lecture Topics in Biology (1-3)~~
~~BIOL A490L Selected Laboratory Topics in Biology (1-3)~~
~~BIOL A495 Instructional Practicum: Laboratory (1)~~
~~BIOL A497 Independent Study in Biology (1-12)~~
~~BIOL A498 Individual Research (1-6)~~
~~BIOL A499 Senior Thesis (3)~~

~~4.~~3. It is recommended that students complete 8 credits from the following: 8

GEOL A111 Physical Geology (4)
GEOL A221 Historical Geology (4)
or
PHYS A123 Basic Physics I (3)
and
PHYS A123L Basic Physics I Laboratory (1)
PHYS A124 Basic Physics II (3)

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	and
PHYS A124L	Basic Physics II Laboratory (1)
	or
PHYS A211	General Physics I (3)
	and
PHYS A211L	General Physics I Laboratory (1)
PHYS A212	General Physics II (3)
	and
PHYS A212L	General Physics II Laboratory (1)

~~5.~~4. A total of 124 credits is required for the degree, 42 credits of which must be upper division.

Bachelor of Science, Biological Sciences

The Bachelor of Science degree includes a single core program of coursework with electives selected from 4 sub-disciplines within the biological sciences.~~with two areas of study. Completing courses from the cellular and molecular biology area prepares students for professional careers in areas such as medicine, dentistry and veterinary science. Completing courses from the organismal, ecology, and evolutionary area prepares students for careers in environmental, organismal, and evolutionary biology.~~ A wide selection of electives is available to all students, including courses offered under BIOL A490, which is a selected topics course. It is imperative that students consult their academic advisors within the Department of Biological Sciences to determine which electives are most appropriate to their career interests. Some of these elective courses are offered periodically, depending on demand. Refer to course descriptions to identify these courses.

Admission Requirements

Complete the Admission to Baccalaureate Programs Requirements in Chapter 7.

Academic Progress

To graduate with a BS in Biological Sciences, the student must complete all courses covered under Major Requirements for a BS in Biological Sciences with a grade of C or better. All prerequisites for Biology courses must be completed with a grade of C or better. Students who audit, or are unable to earn a grade of C or better in, a lower-division (100 or 200 level) course in the Department of Biological Sciences (BIOL) may repeat the course two additional times on a space available basis. Students who audit, or are unable to earn a grade of C or better in, an upper-division (300 or 400 level) course in the Department of Biological Sciences may repeat the course one additional time on a space available basis. Students repeating a course in the Department of Biological Sciences are required to complete all components of that course during the semester in which the course is retaken. When repeating a course with a linked lecture and laboratory component, both components must be repeated. Students enrolled in a laboratory or Experiential Learning course in the Department of Biological Sciences must attend the lab or course the first week of class or they may be administratively dropped.

Graduation Requirements

Students must complete the following graduation requirements:

A. General University Requirements

Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

B. General Education Requirements

Complete the General Education Requirements for Baccalaureate Degrees listed at the beginning of this chapter.

C. College of Arts and Sciences Requirements

Complete the College of Arts and Sciences Requirements listed at the beginning of the CAS section.

D. Major Requirements

1. Some major requirements may also be used to satisfy the College of Arts and Sciences BS requirements.
2. Complete these required support courses (~~39~~ 36 credits):

CHEM A105	General Chemistry I	3
CHEM A105L	General Chemistry I Laboratory	1
CHEM A106	General Chemistry II	3
CHEM A106L	General Chemistry II Laboratory	1
CHEM A321	Organic Chemistry I	3
CHEM A322	Organic Chemistry II	3
CHEM A323L	Organic Chemistry Laboratory	2
MATH A200	Calculus I	4
MATH A201	Calculus II	4
PHYS A123	Basic Physics I (3)	8
PHYS A123L	Basic Physics I Laboratory (1)	
	and	
PHYS A124	Basic Physics II (3)	
PHYS A124L	Basic Physics II Laboratory (1)	
	or	
PHYS A211	General Physics I (3)	
PHYS A211L	General Physics I Laboratory (1)	
	and	
PHYS A212	General Physics II (3)	
PHYS A212L	General Physics II Laboratory (1)	
STAT A253	Applied Statistics for the Sciences (4)	4
	or	
STAT A307	Probability and Statistics (4)	
~~STAT A308~~	~~Intermediate Statistics for the Sciences*~~	~~3~~
	~~or~~	
	~~3 upper division biological sciences credits~~	

~~*It is recommended that STAT A308 be taken. Students may substitute STAT A308 with 3 upper division Biological Sciences credits.~~

3. Complete Biological Sciences core courses (~~32 33~~22 credits):

~~BIOL A115~~	~~Fundamentals of Biology I with~~	~~4~~
~~BIOL A116~~	~~Fundamentals of Biology II~~	~~4~~
BIOL A108	Principles and Methods in Biology	6
BIOL A242	Fundamentals of Cell Biology	~~4~~3
BIOL A252	Principles of Genetics	~~4~~3
BIOL A271	Principles of Ecology	~~4~~3
BIOL ~~A308~~ A288	Principles of Evolution	3
BIOL A243	Experiential Learning: Genetics and Cell Biology	4
	or	
BIOL A273	Experiential Learning: Ecology and Evolution	4
~~BIOL A310~~	~~Principles of Physiology (4)~~	~~3~~ 4
	~~or~~	
~~BIOL A316~~	~~Introduction to Plant Physiology (3)~~	
~~BIOL A340~~	~~General Microbiology~~	~~5~~
BIOL A492	Undergraduate Seminar	1

4. Complete at least 11-1224 credits of upper division program electives from the following areas.

a. A minimum of 3 credits must come from each of 4 of the five 5 areas*.

4.b. A minimum of 6 credits must be Experiential Learning from 2 areas**. from the following list: 11-1224

a. Recommended electives in cellular and molecular biology:

Genetics, Cellular and Molecular Biology

BIOL A340 Microbial Biology (3)
BIOL A451 Microbial Biotechnology (3)
BIOL A452 Human Genome (3)
BIOL A461 Molecular Biology (3)
BIOL A462 Virology (3)
BIOL A463 Molecular Biology of Cancer (3)
BIOL A464 Metals in Biology (3)
BIOL A471 Immunology (3)

BIOL A342 Experiential Learning: Microbial Biology (4)
BIOL A403 Experiential Learning: Microscopical Tissue Techniques (6)
BIOL A454 Experiential Learning: Microbial Biotechnology (4)
BIOL A455 Experiential Learning: Bioinformatics (4)
BIOL A465 Experiential Learning: Molecular Biology (4)
BIOL A488 Experiential Learning: Developmental Biology (4)

Ecology and Evolution

BIOL A365 Astrobiology (3)
BIOL A430 Marine Mammals and Seabirds (3)
BIOL A441 Animal Behavior (3)
BIOL A445 Plant-Herbivore Ecology (4)
BIOL A450 Microbial Ecology (3)
BIOL A472 Biogeography (3)
BIOL A473 Conservation Biology (3)
BIOL A474 Ecotoxicology (3)
BIOL A475 Fish Ecology (3)
BIOL A476 Wildlife Population Dynamics and Management (3)
BIOL A477 Tundra and Taiga Ecosystems (3)
BIOL A478 Biological Oceanography (3)
BIOL A479 Physiological Plant Ecology (3)
BIOL A480 Ecological and Conservation Genetics (3)
BIOL A481 Marine Biology (3)
BIOL A482 Spatial Ecology (3)
BIOL A483 Exploration Ecology (2)
BIOL A486 Evolutionary Ecology (3)
BIOL A489 Population Genetics and Evolutionary Processes (3)

BIOL A442 Experiential Learning: Animal Behavior (3)
BIOL A453 Experiential Learning: Microbial Ecology (4)
BIOL A484 Experiential Learning: Exploration Ecology Field Study (4)

Diversity and Organismal Biology

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BIOL A320 Vertebrate Biology (3)
BIOL A330 Plant Biology (3)
BIOL A340 Microbial Biology (3)
BIOL A423 Ichthyology (3)
BIOL A427 Marine Invertebrate Biology (3)
BIOL A430 Marine Mammals and Seabirds (3)
BIOL A431 Plant Diversity and Evolution (3)
BIOL A487 Comparative Anatomy of Vertebrates (3)

BIOL A321 Experiential Learning: Vertebrate Biology (2)
BIOL A332 Experiential Learning: Plant Biology (2)
BIOL A342 Experiential Learning: Microbial Biology (4)

Physiology

BIOL A310 Principles of Animal Physiology (3)
BIOL A316 Principles of Plant Physiology (3)
BIOL A412 Behavioral Endocrinology (3)
BIOL A413 Neurophysiology (3)
BIOL A414 Chronobiology (3)
BIOL A415 Comparative Animal Physiology (3)
BIOL A416 Exercise Physiology (3)
BIOL A418 Fish Physiology (3)
BIOL A479 Physiological Plant Ecology (3)
BIOL A487 Comparative Anatomy of Vertebrates (3)

Additional Upper Division Electives

BIOL A456 Nonlinear Dynamics and Chaos (3)
BIOL A490 Selected Lecture Topics in Biology (1-3)
BIOL A495 Instructional Practicum: Laboratory (1)
BIOL A497 Independent Study in Biology (1-12)
BIOL A498 Individual Research (1-6)
BIOL A499 Senior Thesis (3)
BIOL A490L Selected Laboratory Topics in Biology (1-3)
CHEM A441 Principles of Biochemistry I (3)
CHEM A442 Principles of Biochemistry II (3)
CHEM A443 Biochemistry Laboratory (2)

BIOL A406 Experiential Learning: Biostatistics (4)
BIOL A408 Experiential Learning: Scanning Electron Microscopy (SEM) (6)

**Several courses are listed under more than one area. Each course can only count toward the credit requirement in one area.*

***BIOL A498 credits may not be counted toward the Experiential Learning minimum requirement*

***BIOL A490L credits may be counted toward the Experiential Learning minimum requirement*

~~CHEM A441 Principles of Biochemistry I (3)~~

~~CHEM A442 Principles of Biochemistry II (3)~~

~~CHEM A443 Biochemistry Laboratory (2)~~

~~**Cellular Molecular**~~

~~BIOL A451 Applied Microbiology (3)~~

~~BIOL A452 Human Genome (3)~~

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~~BIOL A461 Molecular Biology (3)~~

~~BIOL A461L Molecular Biology Laboratory (3)~~

~~BIOL A462 Virology (3)~~

~~BIOL/~~

~~CHEM A471 Immunochemistry (4)~~

~~BIOL A488 Developmental Biology (4)~~

~~**Zoology**~~

~~BIOL A415 Comparative Animal Physiology (3)~~

~~BIOL A487 Comparative Anatomy of Vertebrates (4)~~

~~**Techniques**~~

~~BIOL A403 Microtechnique (4)~~

~~BIOL A495 Instructional Practicum: Laboratory (1)~~

~~b. Recommended elective courses in organismal, ecology and evolutionary biology:~~

~~**Botany**~~

~~BIOL A316 Introduction to Plant Physiology (3)~~

~~BIOL A331 Systematic Botany (4)~~

~~BIOL A333 Biology of Non-Vascular Plants (4)~~

~~BIOL A334 Biology of Vascular Plants (4)~~

~~BIOL A479 Physiological Plant Ecology (3)~~

~~**Zoology**~~

~~BIOL A415 Comparative Animal Physiology (3)~~

~~BIOL A423 Ichthyology (4)~~

~~BIOL A425 Mammalogy (3)~~

~~BIOL A426 Ornithology (4)~~

~~BIOL A427 Invertebrate Zoology (4)~~

~~BIOL A487 Comparative Anatomy of Vertebrates (4)~~

~~**Ecology Systems**~~

~~BIOL A309 Biogeography (3)~~

~~BIOL A373 Conservation Biology (3)~~

~~BIOL A378 Marine Biology (3)~~

~~BIOL A430 Marine Mammal Biology (4)~~

~~BIOL A441 Animal Behavior (4)~~

~~BIOL A445 Plant Herbivore Ecology (4)~~

~~BIOL A450 Microbial Ecology (3)~~

~~BIOL A477 Tundra and Taiga Ecosystems (3)~~

~~BIOL A478 Biological Oceanography (4)~~

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~~BIOL A479 Physiological Plant Ecology (3)~~

~~BIOL A489 Population Genetics and Evolutionary Processes (3)~~

~~**Marine Biology**~~

~~BIOL A378 Marine Biology (3)~~

~~BIOL A423 Ichthyology (4)~~

~~BIOL A427 Invertebrate Zoology (4)~~

~~BIOL A430 Marine Mammal Biology (4)~~

~~BIOL A478 Biological Oceanography (4)~~

~~**Techniques**~~

~~BIOL A403 Microtechnique (4)~~

~~BIOL A495 Instructional Practicum: Laboratory (1)~~

~~c. Special topics, independent study, individual research, other (credits vary):~~

~~ASTR/~~

~~BIOL A365 Astrobiology (3)~~

~~BIOL/CHEM/~~

~~PHYS A456 Nonlinear Dynamics and Chaos (3)~~

~~BIOL A490 Selected Lecture Topics in Biology (1-3)~~

~~BIOL A490L Selected Laboratory Topics in Biology (1-3)~~

~~BIOL A497 Independent Study in Biology (1-12)~~

~~BIOL A498 Individual Research (1-6)~~

~~BIOL A499 Senior Thesis (3)~~

~~CHEM A441 Principles of Biochemistry I (3)~~

~~CHEM A442 Principles of Biochemistry II (3)~~

~~CHEM A443 Biochemistry Laboratory (2)~~

5. A total of 122-125 credits is required for the degree, 42 credits of which must be upper division.

Bachelor of Science, Natural Sciences

The Department of Biological Sciences also oversees the Bachelor of Science in Natural Sciences. This curriculum emphasizes the interrelationships among the sciences. A program of study in the Natural Sciences requires that students select an option within the degree, and complete all courses required within the option, as well as sufficient science elective courses to meet minimum unit requirements for graduation. Students accepted into this flexible degree program select one of three options: the General Sciences Option is designed for students who are interested in understanding the interrelationships among various scientific fields, or in teaching science at the secondary level. The Pre-Health Professions Option is designed to meet the admission requirements of specific professional schools in medicine, dentistry, and veterinary medicine. The Environmental Sciences Option is designed to prepare students for graduate school or for employment in the private or public sector.

For a complete program description see the Natural Sciences section of this chapter.

Minor, Biological Sciences

Students majoring in another subject who wish to minor in Biological Sciences must complete the following requirements. A total of 28 credits is required for the minor, 12 of which must be upper division.

~~BIOL A115~~	~~Fundamentals of Biology I~~	~~4~~		
~~BIOL A116~~	~~Fundamentals of Biology II~~	~~4~~	BIOL A108	Principles and Methods in Biology 6
BIOL A242	Fundamentals of Cell Biology	~~4~~3		
BIOL A252	Principles of Genetics	~~4~~3		
BIOL A288	Principles of Evolution	3		
Upper division Biological Sciences electives		12		

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8Jan14

To: CAS Course and Curriculum Committee
Undergraduate Academic Board

From: Khrys Duddleston, Chair
Department of Biological Sciences Curriculum Committee

RE: Changes to the B.S. in Natural Sciences Degree

The Department of Biological Sciences proposes the following changes to the B.S. in Natural Sciences Degree:

1. Changes to the core course requirements
2. Updating upper division course offerings

These changes are being made to update the course requirements and course lists in light of changes the Dept. is making to the B.S. in Biological Sciences curriculum.

Please contact me if you have any additional questions.

Program/Prefix Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

1a. School or College	1b. Department
AS CAS	Biological Sciences

2. Complete Program Title/Prefix
Bachelor of Science, Natural Sciences

3. Type of Program

Choose one from the appropriate drop down menu: Undergraduate: Bachelor of Science or Graduate: CHOOSE ONE

This program is a Gainful Employment Program: ☐ Yes or ☒ No

4. Type of Action:

PROGRAM	PREFIX
☐ Add	☐ Add
☒ Change	☐ Change
☐ Delete	☐ Inactivate

5. Implementation Date (semester/year)
From: Fall/2015 To: Fall/9999

6a. Coordination with Affected Units Department, School, or College: CAS

Initiator Name (typed): Khrys Duddleston Initiator Signed Initials: _____
Date:_____

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu) Date: 6Jan14

6c. Coordination with Library Liaison Date: 6Jan14

7. Title and Program Description - Please attach the following:

☒ Cover Memo ☒ Catalog Copy in Word using the track changes function

8. Justification for Action
The purpose for making these changes is to improve the time to completion of the degree and align our curriculum with the core concepts and competencies outlined in Vision and Change in Undergraduate Biology Education: A Call to Action (2013), a report of a national conference organized by the American Association for the Advancement of Science with support from the National Science Foundation.

Initiator (faculty only) Date Khrys Duddleston Initiator (TYPE NAME)	☐ Approved ☐ Disapproved Dean/Director of School/College Date
☐ Approved ☐ Disapproved Department Chair Date	☐ Approved ☐ Disapproved Undergraduate/Graduate Academic Board Chair Date
☐ Approved ☐ Disapproved College/School Curriculum Committee Chair Date	☐ Approved ☐ Disapproved Provost or Designee Date

NATURAL SCIENCES

ConocoPhillips Integrated Sciences Building (CPSB), Room 101P, (907) 786-4770
www.uaa.alaska.edu/biology

The undergraduate program in Natural Sciences is founded on a curriculum that emphasizes the interrelationships among the sciences. A program of study in the Natural Sciences requires that students select an option within the degree and complete all courses required within the option, as well as sufficient science elective courses to meet minimum unit requirements for graduation.

Students accepted into this flexible degree program select one of three options: the General Sciences Option is designed for students who are interested in understanding the interrelationships among various scientific fields, or in teaching science at the secondary level. The Pre-Health Professions Option is designed to meet the admission requirements of specific professional schools in medicine, dentistry, and veterinary medicine. The Environmental Sciences Option is designed to prepare students for graduate school or for employment in the private or public sector.

The Natural Sciences program is administered by the Department of Biological Sciences. Upon acceptance to the major the student will be assigned an academic advisor from the Department of Biological Sciences in accordance with the student's declared option, and students are strongly encouraged to consult with their academic advisors to determine which electives best suit their career requirements.

Bachelor of Science, Natural Sciences

Admission Requirements

Complete the Admission to Baccalaureate Programs Requirements in Chapter 7. Declare the major (see Major Requirements) and select one of three options: General Sciences, Pre-Health Professions or Environmental Sciences.

Program Student Learning Outcomes

It is expected that graduates of the Natural Sciences program will:

1. Demonstrate their knowledge of central conceptual models used in the major thematic areas of natural sciences.
2. Identify problems, devise solutions and communicate solutions effectively.

Academic Progress

To graduate with a BS in Natural Sciences, the student must complete all courses covered under Major Requirements for a BS in Natural Sciences with a grade of C or better. All prerequisites for courses used to meet the Natural Sciences degree requirements must be completed with a grade of C or better. Students who audit a course intended to meet the Natural Sciences degree requirements or who are unable to earn a grade of C or better in the course may repeat the course. Students who audit, or are unable to earn a grade of C or better in, a lower-division (100 or 200 level) course in the Department of Biological Sciences (BIOL) may repeat the course two additional times on a space available basis. Students who audit, or are unable to earn a grade of C or better in, an upper-division (300 or 400 level) course in the Department of Biological Sciences may repeat the course one additional time on a space available basis. Students repeating a course in the Department of Biological Sciences are required to complete all components of that course during the semester in which the course is retaken. When repeating a course with a lecture and laboratory component, both components must be repeated. Students enrolled in a laboratory or Experiential Learning course in the Department of Biological Sciences must attend the lab or course the first week of class or they may be administratively dropped.

Graduation Requirements

Students must complete the following graduation requirements:

A. General University Requirements

Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

B. General Education Requirements

Complete the General Education Requirements for Baccalaureate Degrees (GERs) listed at the beginning of this chapter.

C. College of Arts and Sciences Requirements

Complete the College of Arts and Sciences (CAS) Requirements listed at the beginning of the CAS section. It is recommended that MATH A200 or MATH A272, STAT A253 or STAT A307, and the computer programming requirements be completed in the first two years of study.

D. Major Requirements

1. To declare the Bachelor of Science in Natural Sciences as their major, students must meet with an advisor and then apply to be accepted into the major. To schedule your advising session, contact the Department of Biological Sciences. At the advising session students are required to:
   a. choose one of the three options and
   b. file a preliminary program of study with the Department of Biological Sciences.
2. It is strongly recommended that any changes to the preliminary program be reviewed by an advisor to ensure that the final program of study will meet all requirements for graduation.
3. Students must submit a final Program of Study-Natural Sciences Degree form signed by their advisor to both the Office of the Registrar and the Department of Biological Sciences during the semester prior to the semester in which they plan to graduate. All courses listed in the Program of Study-Natural Sciences Degree form must be approved by the formal advisor before submitting the form to the Office of the Registrar and the Department of Biological Sciences.
4. No more than 6 credits may come from courses designated as A495, A498 and A499 combined, with no more than 2 credits from A495.
5. No more than 4 credits may be A492, with no more than 2 from the same discipline.
6. Courses not listed as approved for the Natural Sciences degree may be considered by petition, which should be signed by an advisor.
7. A total of 120-124 credits is required for the degree, of which 42 credits must be upper division.

Note 1: It is suggested that the required science sequences for any option be completed in the first two years of study.

Note 2: Students are encouraged to pay careful attention to prerequisite requirements when designing their program of study.

Note 3: Some courses meet more than one of the requirements (GER, CAS, Major). Consult the beginning of this chapter for information about GERs and the beginning of the CAS section for information about CAS requirements.

Environmental Sciences Option (80 credits)

1. Complete the following required courses (28 credits):

BIOL A108	Principles and Methods in Biology	6
CHEM A105	General Chemistry I	3
CHEM A105L	General Chemistry I Laboratory	1
CHEM A106	General Chemistry II	3
CHEM A106L	General Chemistry II Laboratory	1
GEOL A111	Physical Geology	4
GEOL A221	Historical Geology	4
ENVI A211	Environmental Science: Systems and Processes	3
ENVI A212	Living on Earth: People and the Environment	3

2. Complete an additional 52 credits of degree electives from the approved course lists for the Environmental Sciences Option.
   a. A minimum of 32 credits must be upper division.

b. A minimum of 20 credits must come from the following Natural and Physical Sciences Course List for the Environmental Sciences Option: 20

ASTR/ BIOL A365	Astrobiology (3)
BIOL/ GEOL A178	Fundamentals of Oceanography (3)
BIOL/ GEOL A179	Fundamentals of Oceanography Laboratory (1)
BIOL/ CPLX A200	Introduction to Complexity (3)
BIOL A242	Fundamentals of Cell Biology (3)
BIOL A243	Experiential Learning: Genetics and Cell Biology (4)
BIOL A252	Principles of Genetics (3)
BIOL A271	Principles of Ecology (3)
BIOL A273	Experiential Learning: Ecology and Evolution (4)
BIOL A288	Principles of Evolution (3)
BIOL A310	Principles of Animal Physiology (3)
BIOL A316	Principles of Plant Physiology (3)
BIOL A340	Microbial Biology (3)
BIOL A342	Experiential Learning: Microbial Biology (4)
BIOL A403	Experiential Learning: Microscopical Tissue Techniques (6)
BIOL A406	Experiential Learning: Biostatistics (4)
BIOL A408	Experiential Learning: Scanning Electron Microscopy (SEM) (6)
BIOL A415	Comparative Animal Physiology (3)
BIOL A418	Fish Physiology (3)
BIOL A423	Ichthyology (3)
BIOL A427	Marine Invertebrate Biology (3)
BIOL A430	Marine Mammals and Seabirds (3)
BIOL A431	Plant Diversity and Evolution (3)
BIOL A441	Animal Behavior (3)
BIOL A442	Experiential Learning: Animal Behavior (3)
BIOL A445	Plant-Herbivore Ecology (4)
BIOL A450	Microbial Ecology (3)
BIOL A451	Microbial Biotechnology (3)
BIOL A453	Experiential Learning: Microbial Ecology (4)
BIOL A454	Experiential Learning: Microbial Biotechnology (4)
BIOL/CHEM/ PHYS A456	Nonlinear Dynamics and Chaos (3)
BIOL A472	Biogeography (3)
BIOL A473	Conservation Biology (3)
BIOL A474	Ecotoxicology (3)
BIOL A475	Fish Ecology
BIOL A476	Wildlife Population Dynamics and Management (3)
BIOL A477	Tundra and Taiga Ecosystems (3)

BIOL A478	Biological Oceanography (3)
BIOL A479	Physiological Plant Ecology (3)
BIOL A480	Ecological and Conservation Genetics (3)
BIOL A481	Marine Biology (3)
BIOL A482	Spatial Ecology (3)
BIOL A483	Exploration Ecology (2)
BIOL A484	Experiential Learning: Exploration Ecology Field Study (4)
BIOL A486	Evolutionay Ecology (3)
BIOL A487	Comparative Anatomy of Vertebrates (4)
BIOL A489	Population Genetics and Evolutionary Processes (3)
BIOL A490	Selected Lecture Topics in Biology (1-3)
BIOL A490L	Selected Laboratory Topics in Biology (1-3)
BIOL A492	Undergraduate Seminar (1)
BIOL A495A	Internship in the Biological Sciences (3)
BIOL A498	Individual Research (1-6)
BIOL A499	Senior Thesis (3)
CHEM A253	Principles of Inorganic Chemistry (3)
CHEM A311	Physical Chemistry: A Biological Orientation (3)
CHEM A312	Quantitative Analysis (5)
CHEM A321	Organic Chemistry I (3)
CHEM A322	Organic Chemistry II (3)
CHEM A323L	Organic Chemistry Laboratory (2)
CHEM A331	Physical Chemistry I (3)
CHEM A332	Physical Chemistry II (3)
CHEM A333L	Physical Chemistry Lab (2)
CHEM A434	Instrumental Methods (5)
CHEM A441	Principles of Biochemistry I (3)
CHEM A442	Principles of Biochemistry II (3)
CHEM A443	Biochemistry Laboratory (2)
CHEM A450	Environmental Chemistry (3)
CHEM A453	Advanced Inorganic Chemistry (5)
CHEM A460	Chemical Ecotoxicology (3)
CHEM A492	Undergraduate Seminar (1)
CHEM A498	Individual Research (3)
GEOL A115	Environmental Geology (3)
GEOL A115L	Environmental Geology Laboratory (1)
GEOL A190	Introductory Topics in Geology (1-3)
GEOL A320	Volcanology (3)
GEOL A321	Mineralogy (4)
GEOL A322	Igneous and Metamorphic Petrology (4)
GEOL A325	Geology of Ore Deposits (3)
GEOL A335	Structural Geology (4)
GEOL A340	Hydrogeology (3)
GEOL A350	Geomorphology (4)
GEOL A360	Geochemistry (3)

GEOL A380	Anchorage Field Studies (3)
GEOL A381	Kenai Peninsula Field Studies (3)
GEOL A382	Geological Field Studies (3)
GEOL A450	Paleoclimatology and Global Change (3)
GEOL A452	Sedimentology and Stratigraphy (4)
GEOL A454	Glacial and Quaternary Geology (3)
GEOL A455	Permafrost (3)
GEOL A456	Geoarchaeology (3)
GEOL A460	Environmental Geochemistry (3)
GEOL A475	Environmental Geophysics (3)
GEOL A480	Geological Field Methods (3)
GEOL A481	Alaskan Field Investigations (3)
GEOL A482	Geological Field Investigations (3)
GEOL A490	Advanced Topics in Geology (1-4)
GEOL A492	Geology Seminar (1)
GEOL A495	Geology Internship (1-3)
GEOL A498	Student Research (1-3)
GEOL A499	Senior Thesis (3)
LSIS A201	Life on Earth (5)
LSIS A202	Concepts and Processes: Natural Sciences (5)
PHYS A123	Basic Physics I* (3)
PHYS A123L	Basic Physics I Laboratory* (1)
PHYS A124	Basic Physics II* (3)
PHYS A124L	Basic Physics II Laboratory* (1)
PHYS A211	General Physics I* (3)
PHYS A211L	General Physics I Laboratory* (1)
PHYS A212	General Physics II* (3)
PHYS A212L	General Physics II Laboratory* (1)
PHYS A303	Modern Physics (3)

**Students cannot get credit for both PHYS 123/L and PHYS 211/L or PHYS 124/L and PHYS 212/L.*

c. A minimum of 15 credits must come from the following Math and Computational Skills Course List for the Environmental Sciences Option: 15

CS A109	Computer Programming (Languages Vary) (3)c
	or
CS A110	Java Programming (3)
	or
CS A111	Visual Basic .NET Programming (3)
	or
CSCE A201	Computer Programming I (4)
CSCE A202	Object-Oriented Programming (3)
CSCE A302	Object-Oriented Design Patterns (3)
CSCE A311	Data Structures and Algorithms (3)
CSCE A351	Automata, Algorithms and Complexity (3)
CSCE A360	Database Systems (3)

CSCE A385	Computer Graphics (3)
CSCE A411	Artificial Intelligence (3)
CSCE A412	Evolutionary Computing (3)
GEO A157	Analytical and Digital Cartography (3)
GEO A167	Remote Sensing and Image Analysis (4)
GEO A248	Digital Terrain Cartography (3)
GEO A257	Elements of Photogrammetry (3)
GEO A359	Geodesy and Map Projections (3)
GEO A459	Geodetic Geomatics (3)
GEO A467	Analytical and Digital Photogrammetry (3)
GIS A268	Elements of Geographic Information Systems (GIS) (4)
GIS A295	Internship in Geographic Information Systems I (3)
GIS A366	Spatial Information Analysis and Modeling (3)
GIS A367	GIS and Remote Sensing (3)
GIS A370	GIS and Remote Sensing for Natural Resources (3)
GIS A433	Coastal Mapping (3)
GIS A458	Design and Management of Spatial Information (3)
GIS A468	Integration of Geomatics Technologies (3)
GIS A495	Internship in Geographic Information Systems II (3)
MATH A200	Calculus I (4)
	or
MATH A272	Applied Calculus (3)
MATH A201	Calculus II (4)
MATH A202	Calculus III (4)
MATH A215	Introduction to Mathematical Proofs (3)
MATH A231	Introduction to Discrete Mathematics (3)
MATH A302	Ordinary Differential Equations (3)
MATH A303	Introduction to Modern Algebra (3)
MATH A305	Introduction to Geometries (3)
MATH A306	Discrete Methods (3)
MATH A314	Linear Algebra (3)
MATH A321	Analysis of Several Variables (3)
MATH A324	Advanced Calculus (3)
MATH A371	Stochastic Processes (3)
MATH A407	Mathematical Statistics I (3)
MATH A408	Mathematical Statistics II (3)
MATH A410	Introduction to Complex Analysis (3)
MATH A422	Partial Differential Equations (3)
STAT A253	Applied Statistics for the Sciences (4)
	or
STAT A307	Probability and Statistics (4)

STAT A308	Intermediate Statistics for the Sciences (3)
STAT A402	Scientific Sampling (3)
STAT A403	Regression Analysis (3)
STAT A404	Analysis of Variance (3)
STAT A405	Nonparametric Statistics (3)
STAT A407	Time Series Analysis (3)
STAT A408	Multivariate Statistics (3)
STAT A490	Selected Topics in Statistics (1-3)

d. A minimum of 9 credits must come from the following Social Sciences Course List for the Environmental Sciences Option: 9

ANTH A101	Introduction to Anthropology (3)
ANTH A202	Cultural Anthropology (3)
ANTH A205	Biological Anthropology (3)
ANTH A335	Native North Americans (3)
ANTH A354	Culture and Ecology (3)
ANTH A415	Applied Anthropology (3)
ANTH A445	Evolution of Humans and Disease (3)
CEL A292	Introduction to Civic Engagement (3)
CEL A390	Selected Topics in Civic Engagement (1-3)
ECON A201	Principles of Macroeconomics (3)
ECON A202	Principles of Microeconomics (3)
ECON A210	Environmental Economics and Policy (3)
ECON A300	The Economy of Alaska (3)
ECON A321	Intermediate Microeconomics (3)
ECON A324	Intermediate Macroeconomics (3)
ECON A435	Natural Resource Economics (3)
ENVI/ PHIL A303	Environmental Ethics (3)
ENVI A470	Environmental Planning and Problem Solving (4)
ENVI A490	Topics in Environment and Society (3)
GEOG A101	Local Places/Global Regions: An Introduction to Geography (3)
LSSS A311	People, Places and Ecosystems (3)
SOC A101	Introduction to Sociology (3)
SOC A404	Environmental Sociology (3)

Pre-Health Professions Option (80 credits)

1. Complete the following required courses (22 credits):

BIOL A108	Principles and Methods in Biology	6
CHEM A105	General Chemistry I	3
CHEM A105L	General Chemistry I Laboratory	1
CHEM A106	General Chemistry II	3
CHEM A106L	General Chemistry II Laboratory	1
PHYS A123	Basic Physics I	3
PHYS A123L	Basic Physics I Laboratory	1

PHYS A124	Basic Physics II	3
PHYS A124L	Basic Physics II Laboratory	1

2. Complete an additional 58 credits of degree electives from the approved course lists for the Pre-Health Professions Option.
   a. A minimum of 32 credits must be upper division.
   b. A minimum of 24 credits must come from the following Natural Sciences Course List for the Pre-Health Professions Option: 24

BIOL A111	Human Anatomy and Physiology I (4)
BIOL A112	Human Anatomy and Physiology II (4)
BIOL/ CPLX A200	Introduction to Complexity (3)
BIOL A240	Introductory Microbiology for Health Sciences (4)
	or
BIOL A340	Microbial Biology (3)
	and
BIOL A342	Experiential Learning: Microbial Biology (4)
BIOL A242	Fundamentals of Cell Biology (3)
BIOL A252	Principles of Genetics (3)
BIOL A243	Experiential Learning: Genetics and Cell Biology (4)
BIOL A310	Principles of Animal Physiology (3)
BIOL A320	Vertebrate Biology (3)
BIOL A321	Experiential Learning: Vertebrate Biology (2)
BIOL A403	Experiential Learning: Microscopical Tissue Techniques (6)
BIOL A408	Experiential Learning: Scanning Electron Microscopy (SEM) (6)
BIOL A412	Behavioral Endocrinology (3)
BIOL A413	Neurophysiology (3)
BIOL A414	Chronobiology (3)
BIOL A415	Comparative Animal Physiology (3)
BIOL A416	Exercise Physiology (3)
BIOL A451	Microbial Biotechnology (3)
BIOL A452	Human Genome (3)
BIOL A454	Experiential Learning: Microbial Biotechnology (4)
BIOL A455	Experiential Learning: Bioinformatics (4)
BIOL/CHEM/ PHYS A456	Nonlinear Dynamics and Chaos (3)
BIOL A461	Molecular Biology (3)
BIOL A462	Virology (3)
BIOL A463	Molecular Biology of Cancer (3)
BIOL A464	Metals in Biology (3)
BIOL A465	Experiential Learning: Molecular Biology (4)
BIOL/ CHEM A471	Immunology (3)
BIOL A487	Comparative Anatomy of Vertebrates (4)
BIOL A488	Experiential Learning: Developmental Biology (4)

BIOL A489	Population Genetics and Evolutionary Processes (3)
BIOL A490	Selected Lecture Topics in Biology (1-3)
BIOL A490L	Selected Laboratory Topics in Biology (1-3)
BIOL A492	Undergraduate Seminar (1)
BIOL A495A	Internship in the Biological Sciences (3)
BIOL A498	Individual Research (1-6)
CHEM A311	Physical Chemistry: A Biological Orientation (3)
CHEM A312	Quantitative Analysis (5)
CHEM A321	Organic Chemistry I (3)
CHEM A322	Organic Chemistry II (3)
CHEM A323L	Organic Chemistry Laboratory (2)
CHEM A434	Instrumental Methods (5)
CHEM A441	Principles of Biochemistry I (3)
CHEM A442	Principles of Biochemistry II (3)
CHEM A443	Biochemistry Laboratory (2)
CHEM A460	Chemical Ecotoxicology (3)
CHEM A492	Undergraduate Seminar (1)
CHEM A498	Individual Research (3)

c. A minimum of (15) credits must come from the following Social Sciences Course List for the Pre-Health Professions Option: 15

ANTH A101	Introduction to Anthropology (3)
ANTH A205	Biological Anthropology (3)
ANTH A324	Psychological Anthropology (3)
ANTH A365	Modern Human Biological Diversity (3)
ANTH A445	Evolution of Humans and Disease (3)
ANTH A455	Medical Anthropology (3)
ANTH A457	Food and Nutrition: An Anthropological Perspective (3)
ANTH A485	Human Osteology (4)
ANTH A486	Applied Human Osteology (3)
ANTH A490	Selected Topics in Anthropology (1-3)
ECON A201	Principles of Macroeconomics (3)
ECON A202	Principles of Microeconomics (3)
HS A210	Introduction to Environmental Health (3)
HS A220	Core Concepts in the Health Sciences (3)
HS A230	Introduction to Global Health (3)
HS A326	Introduction to Epidemiology (3)
HS A492	Senior Seminar: Contemporary Health Policy (3)
PHIL A302	Biomedical Ethics (3)
PSY A111	General Psychology (3)
PSY A143	Death and Dying (3)

PSY A150	Lifespan Development (3)
PSY A260	Statistics for Psychology (3)
PSY A260L	Statistics for Psychology Lab (1)
PSY A261	Research Methods in Psychology (4)
PSY A345	Abnormal Psychology (3)
PSY A355	Learning and Cognition (4)
PSY A366	Perception (3)
PSY A368	Personality (3)
PSY A370	Behavioral Neuroscience (3)
PSY A412	Foundations of Modern Psychology (3)
PSY A420	Conducting Research in Psychology (3)
PSY A425	Clinical Psychology (3)
PSY A428	Evolutionary Psychology (3)
PSY A450	Adult Development and Aging (3)
PSY A455	Mental Health Services in Alaska (3)
PSY A485	Health Psychology (3)
PSY A498	Individual Research (3)

d. A minimum of 9 credits must come from the following Math and Computational Skills Course List for the Pre-Health Professions Option: 9

MATH A200	Calculus I (4)
	or
MATH A272	Applied Calculus (3)
MATH A201	Calculus II (4)
MATH A202	Calculus III (4)
MATH A215	Introduction to Mathematical Proofs (3)
MATH A231	Introduction to Discrete Mathematics (3)
MATH A302	Ordinary Differential Equations (3)
MATH A303	Introduction to Modern Algebra (3)
MATH A305	Introduction to Geometries (3)
MATH A306	Discrete Methods (3)
MATH A314	Linear Algebra (3)
MATH A321	Analysis of Several Variables (3)
MATH A324	Advanced Calculus (3)
MATH A371	Stochastic Processes (3)
MATH A407	Mathematical Statistics I (3)
MATH A408	Mathematical Statistics II (3)
MATH A410	Introduction to Complex Analysis (3)
MATH A422	Partial Differential Equations (3)
MATH A490A	Selected Topics in Pure Mathematics (1-3)
MATH A490B	Selected Topics in Applied Mathematics (1-3)
MATH A498	Individual Research (1-3)
STAT A253	Applied Statistics for the Sciences (4)
	or
STAT A307	Probability and Statistics (4)

STAT A308	Intermediate Statistics for the Sciences (3)
STAT A402	Scientific Sampling (3)
STAT A403	Regression Analysis (3)
STAT A404	Analysis of Variance (3)
STAT A405	Nonparametric Statistics (3)
STAT A407	Time Series Analysis (3)
STAT A408	Multivariate Statistics (3)
STAT A490	Selected Topics in Statistics (1-3)

General Sciences Option (80 credits)

1. Complete the following required courses (30 credits):

BIOL A108	Principles and Methods in Biology	6
CHEM A105	General Chemistry I	3
CHEM A105L	General Chemistry I Laboratory	1
CHEM A106	General Chemistry II	3
CHEM A106L	General Chemistry II Laboratory	1
GEOL A111	Physical Geology	4
GEOL A221	Historical Geology	4
PHYS A123	Basic Physics I (3)	8
PHYS A123L	Basic Physics I Laboratory (1)	
	and	
PHYS A124	Basic Physics II (3)	
PHYS A124L	Basic Physics II Laboratory (1)	
	or	
PHYS A211	General Physics I (3)	
PHYS A211L	General Physics I Laboratory (1)	
	and	
PHYS A212	General Physics II (3)	
PHYS A212L	General Physics II Laboratory (1)	

2. Complete an additional 50 credits of degree electives. 50
   a. The credits may come from the following course lists:
      i. Environmental Sciences Option Course Lists (above)
      ii. Pre-Health Professions Course Lists (above)
      iii. General Sciences Additional Course List

ASTR A103	Solar System Astronomy (3)
ASTR A103L	Solar System Astronomy Laboratory (1)
ASTR A104	Stars, Galaxies and Cosmology (3)
ASTR A104L	Stars, Galaxies and Cosmology Laboratory (1)
PHYS A311	Intermediate Classical Mechanics (3)
PHYS/EE A314	Electromagnetics (3)
PHYS A320	Simulation of Physical Systems (3)
PHYS/EE A324	Electromagnetics II (3)
PHYS A403	Quantum Mechanics (3)

PHYS A413	Statistical and Thermal Mechanics (3)
PHYS A498	Individual Research (1-6)

b. At least two of the following disciplines must be represented at the upper division level: Astronomy, Biology, Chemistry, Geology, Mathematics, Physics, Statistics.

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NATURAL SCIENCES

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www.uaa.alaska.edu/biology

The undergraduate program in Natural Sciences is founded on a curriculum that emphasizes the interrelationships among the sciences. A program of study in the Natural Sciences requires that students select an option within the degree and complete all courses required within the option, as well as sufficient science elective courses to meet minimum unit requirements for graduation.

Students accepted into this flexible degree program select one of three options: the General Sciences Option is designed for students who are interested in understanding the interrelationships among various scientific fields, or in teaching science at the secondary level. The Pre-Health Professions Option is designed to meet the admission requirements of specific professional schools in medicine, dentistry, and veterinary medicine. The Environmental Sciences Option is designed to prepare students for graduate school or for employment in the private or public sector.

The Natural Sciences program is administered by the Department of Biological Sciences. Upon acceptance to the major the student will be assigned an academic advisor from the Department of Biological Sciences in accordance with the student's declared option, and students are strongly encouraged to consult with their academic advisors to determine which electives best suit their career requirements.

Bachelor of Science, Natural Sciences

Admission Requirements

Complete the Admission to Baccalaureate Programs Requirements in Chapter 7. Declare the major (see Major Requirements) and select one of three options: General Sciences, Pre-Health Professions or Environmental Sciences.

Program Student Learning Outcomes

It is expected that graduates of the Natural Sciences program will:

1. Demonstrate their knowledge of central conceptual models used in the major thematic areas of natural sciences.
2. Identify problems, devise solutions and communicate solutions effectively.

Academic Progress

To graduate with a BS in Natural Sciences, the student must complete all courses covered under Major Requirements for a BS in Natural Sciences with a grade of C or better. All prerequisites for courses used to meet the Natural Sciences degree requirements must be completed with a grade of C or better. Students who audit a course intended to meet the Natural Sciences degree requirements or who are unable to earn a grade of C or better in the course may repeat the course. Students who audit, or are unable to earn a grade of C or better in, a lower-division (100 or 200 level) course in the Department of Biological Sciences (BIOL) may repeat the course two additional times on a space available basis. Students who audit, or are unable to earn a grade of C or better in, an upper-division (300 or 400 level) course in the Department of Biological Sciences may repeat the course one additional time on a space available basis. Students repeating a course in the Department of Biological Sciences are required to complete all components of that course during the semester in which the course is retaken. When repeating a course with a lecture and laboratory component, both components must be repeated. Students enrolled in a laboratory or Experiential Learning course in the Department of Biological Sciences must attend the lab or course the first week of class or they may be administratively dropped.

Graduation Requirements

Students must complete the following graduation requirements:

A. General University Requirements

Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

B. General Education Requirements

Complete the General Education Requirements for Baccalaureate Degrees (GERs) listed at the beginning of this chapter.

C. College of Arts and Sciences Requirements

Complete the College of Arts and Sciences (CAS) Requirements listed at the beginning of the CAS section. It is recommended that MATH A200 or MATH A272, STAT A253 or STAT A307, and the computer programming requirements be completed in the first two years of study.

D. Major Requirements

1. To declare the Bachelor of Science in Natural Sciences as their major, students must meet with an advisor and then apply to be accepted into the major. To schedule your advising session, contact the Department of Biological Sciences. At the advising session students are required to:
   a. choose one of the three options and
   b. file a preliminary program of study with the Department of Biological Sciences.
2. It is strongly recommended that any changes to the preliminary program be reviewed by an advisor to ensure that the final program of study will meet all requirements for graduation.
3. Students must submit a final Program of Study-Natural Sciences Degree form signed by their advisor to both the Office of the Registrar and the Department of Biological Sciences during the semester prior to the semester in which they plan to graduate. All courses listed in the Program of Study-Natural Sciences Degree form must be approved by the formal advisor before submitting the form to the Office of the Registrar and the Department of Biological Sciences.
4. No more than 6 credits may come from courses designated as A495, A498 and A499 combined, with no more than 2 credits from A495.
5. No more than 4 credits may be A492, with no more than 2 from the same discipline.
6. Courses not listed as approved for the Natural Sciences degree may be considered by petition, which should be signed by an advisor.
7. A total of 120-124 credits is required for the degree, of which 42 credits must be upper division.

Note 1: It is suggested that the required science sequences for any option be completed in the first two years of study.

Note 2: Students are encouraged to pay careful attention to prerequisite requirements when designing their program of study.

Note 3: Some courses meet more than one of the requirements (GER, CAS, Major). Consult the beginning of this chapter for information about GERs and the beginning of the CAS section for information about CAS requirements.

Environmental Sciences Option (80 credits)

1. Complete the following required courses (28~~30~~ credits):

~~BIOL A115~~	~~Fundamentals of Biology I~~	~~4~~
~~BIOL A116~~	~~Fundamentals of Biology II~~	~~4~~
BIOL A108	Principles and Methods in Biology	6
CHEM A105	General Chemistry I	3
CHEM A105L	General Chemistry I Laboratory	1
CHEM A106	General Chemistry II	3
CHEM A106L	General Chemistry II Laboratory	1
GEOL A111	Physical Geology	4
GEOL A221	Historical Geology	4
ENVI A211	Environmental Science: Systems and Processes	3
ENVI A212	Living on Earth: People and the Environment	3

2. Complete an additional ~~50~~ 52 credits of degree electives from the approved course lists for the Environmental Sciences Option.
   a. A minimum of 32 credits must be upper division.
   ~~a.~~

b. A minimum of 20 credits must come from the following Natural and Physical Sciences Course List for the Environmental Sciences Option: 20

ASTR/
BIOL A365 Astrobiology (3)
BIOL/
GEOL A178 Fundamentals of Oceanography (3)
BIOL/
GEOL A179 Fundamentals of Oceanography Laboratory (1)
BIOL/
CPLX A200 Introduction to Complexity (3)
BIOL A242 Fundamentals of Cell Biology (~~4~~3)
~~BIOL A252 Principles of Genetics (4)~~
~~BIOL A271 Principles of Ecology (4)~~
~~BIOL A308 Principles of Evolution (3)~~BIOL A243 Experiential Learning: Genetics and Cell Biology (4)
BIOL A252 Principles of Genetics (3)
BIOL A271 Principles of Ecology (3)
BIOL A273 Experiential Learning: Ecology and Evolution (4)
BIOL A288 Principles of Evolution (3)

~~BIOL A309 Biogeography (3)~~
BIOL A310 Principles of Animal Physiology (3~~4~~)
BIOL A316 ~~Introduction to~~Principles of Plant Physiology (3)
~~BIOL A331 Systematic Botany (4)~~
~~BIOL A333 Biology of Non-Vascular Plants (4)~~
~~BIOL A334 Biology of Vascular Plants (4)~~
BIOL A340 ~~General Microbiology~~Microbial Biology (~~5~~3)
BIOL A342 Experiential Learning: Microbial Biology (4)
BIOL A403 Experiential Learning: Microscopical Tissue Techniques (6)
BIOL A406 Experiential Learning: Biostatistics (4)
BIOL A408 Experiential Learning: Scanning Electron Microscopy (SEM) (6)
~~BIOL A309 Biogeography (3)~~
~~BIOL A373 Conservation Biology (3)~~
~~BIOL A378 Marine Biology (3)~~
~~BIOL A403 Microtechnique (4)~~
BIOL A415 Comparative Animal Physiology (3)
BIOL A418 Fish Physiology (3)
BIOL A423 Ichthyology (~~4~~3)
~~BIOL A425 Mammalogy (3)~~
~~BIOL A426 Ornithology (4)~~
BIOL A427 Marine Invertebrate ~~Zoology~~ Biology (~~4~~3)
BIOL A430 Marine ~~Mammal Biology (4)~~Mammals and Seabirds (3)
BIOL A431 Plant Diversity and Evolution (3)
BIOL A441 Animal Behavior (~~4~~3)
BIOL A442 Experiential Learning: Animal Behavior (3)

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BIOL A445	Plant-Herbivore Ecology (4)
BIOL A450	Microbial Ecology (3)
BIOL A451	~~Applied Microbiology~~Microbial Biotechnology (3)
BIOL A453	Experiential Learning: Microbial Ecology (4)
BIOL A454	Experiential Learning: Microbial Biotechnology (4)
BIOL/CHEM/ PHYS A456	Nonlinear Dynamics and Chaos (3)
BIOL A472	Biogeography (3)
BIOL A473	Conservation Biology (3)
BIOL A474	Ecotoxicology (3)
BIOL A475	Fish Ecology
BIOL A476	Wildlife Population Dynamics and Management (3)
BIOL A477	Tundra and Taiga Ecosystems (3)
BIOL A478	Biological Oceanography (~~4~~3)
BIOL A479	Physiological Plant Ecology (3)
BIOL A480	Ecological and Conservation Genetics (3)
BIOL A481	Marine Biology (3)
BIOL A482	Spatial Ecology (3)
BIOL A483	Exploration Ecology (2)
BIOL A484	Experiential Learning: Exploration Ecology Field Study (4)
BIOL A486	Evolutionay Ecology (3)
BIOL A487	Comparative Anatomy of Vertebrates (4)
BIOL A489	Population Genetics and Evolutionary Processes (3)
BIOL A490	Selected Lecture Topics in Biology (1-3)
BIOL A490L	Selected Laboratory Topics in Biology (1-3)
BIOL A492	Undergraduate Seminar (1)
BIOL A495A	Internship in the Biological Sciences (3)
BIOL A498	Individual Research (1-6)
BIOL A499	Senior Thesis (3)
CHEM A253	Principles of Inorganic Chemistry (3)
CHEM A311	Physical Chemistry: A Biological Orientation (3)
CHEM A312	Quantitative Analysis (5)
CHEM A321	Organic Chemistry I (3)
CHEM A322	Organic Chemistry II (3)
CHEM A323L	Organic Chemistry Laboratory (2)
CHEM A331	Physical Chemistry I (3)
CHEM A332	Physical Chemistry II (3)
CHEM A333L	Physical Chemistry Lab (2)
CHEM A434	Instrumental Methods (5)
CHEM A441	Principles of Biochemistry I (3)
CHEM A442	Principles of Biochemistry II (3)
CHEM A443	Biochemistry Laboratory (2)
CHEM A450	Environmental Chemistry (3)
CHEM A453	Advanced Inorganic Chemistry (5)
CHEM A460	Chemical Ecotoxicology (3)
CHEM A492	Undergraduate Seminar (1)

CHEM A498	Individual Research (3)
GEOL A115	Environmental Geology (3)
GEOL A115L	Environmental Geology Laboratory (1)
GEOL A190	Introductory Topics in Geology (1-3)
GEOL A320	Volcanology (3)
GEOL A321	Mineralogy (4)
GEOL A322	Igneous and Metamorphic Petrology (4)
GEOL A325	Geology of Ore Deposits (3)
GEOL A335	Structural Geology (4)
GEOL A340	Hydrogeology (3)
GEOL A350	Geomorphology (4)
GEOL A360	Geochemistry (3)
GEOL A380	Anchorage Field Studies (3)
GEOL A381	Kenai Peninsula Field Studies (3)
GEOL A382	Geological Field Studies (3)
GEOL A450	Paleoclimatology and Global Change (3)
GEOL A452	Sedimentology and Stratigraphy (4)
GEOL A454	Glacial and Quaternary Geology (3)
GEOL A455	Permafrost (3)
GEOL A456	Geoarchaeology (3)
GEOL A460	Environmental Geochemistry (3)
GEOL A475	Environmental Geophysics (3)
GEOL A480	Geological Field Methods (3)
GEOL A481	Alaskan Field Investigations (3)
GEOL A482	Geological Field Investigations (3)
GEOL A490	Advanced Topics in Geology (1-4)
GEOL A492	Geology Seminar (1)
GEOL A495	Geology Internship (1-3)
GEOL A498	Student Research (1-3)
GEOL A499	Senior Thesis (3)
LSIS A201	Life on Earth (5)
LSIS A202	Concepts and Processes: Natural Sciences (5)
PHYS A123	Basic Physics I* (3)
PHYS A123L	Basic Physics I Laboratory* (1)
PHYS A124	Basic Physics II* (3)
PHYS A124L	Basic Physics II Laboratory* (1)
PHYS A211	General Physics I* (3)
PHYS A211L	General Physics I Laboratory* (1)
PHYS A212	General Physics II* (3)
PHYS A212L	General Physics II Laboratory* (1)
PHYS A303	Modern Physics (3)

**Students cannot get credit for both PHYS 123/L and PHYS 211/L or PHYS 124/L and PHYS 212/L.*

c. A minimum of 15 credits must come from the following Math and Computational Skills Course List for the Environmental Sciences Option: 15

CS A109	Computer Programming (Languages Vary) (3)c

	or
CS A110	Java Programming (3)
	or
CS A111	Visual Basic .NET Programming (3)
	or
CSCE A201	Computer Programming I (4)
CSCE A202	Object-Oriented Programming (3)
CSCE A302	Object-Oriented Design Patterns (3)
CSCE A311	Data Structures and Algorithms (3)
CSCE A351	Automata, Algorithms and Complexity (3)
CSCE A360	Database Systems (3)
CSCE A385	Computer Graphics (3)
CSCE A411	Artificial Intelligence (3)
CSCE A412	Evolutionary Computing (3)
GEO A157	Analytical and Digital Cartography (3)
GEO A167	Remote Sensing and Image Analysis (4)
GEO A248	Digital Terrain Cartography (3)
GEO A257	Elements of Photogrammetry (3)
GEO A359	Geodesy and Map Projections (3)
GEO A459	Geodetic Geomatics (3)
GEO A467	Analytical and Digital Photogrammetry (3)
GIS A268	Elements of Geographic Information Systems (GIS) (4)
GIS A295	Internship in Geographic Information Systems I (3)
GIS A366	Spatial Information Analysis and Modeling (3)
GIS A367	GIS and Remote Sensing (3)
GIS A370	GIS and Remote Sensing for Natural Resources (3)
GIS A433	Coastal Mapping (3)
GIS A458	Design and Management of Spatial Information (3)
GIS A468	Integration of Geomatics Technologies (3)
GIS A495	Internship in Geographic Information Systems II (3)
MATH A200	Calculus I (4)
	or
MATH A272	Applied Calculus (3)
MATH A201	Calculus II (4)
MATH A202	Calculus III (4)
MATH A215	Introduction to Mathematical Proofs (3)
MATH A231	Introduction to Discrete Mathematics (3)
MATH A302	Ordinary Differential Equations (3)
MATH A303	Introduction to Modern Algebra (3)
MATH A305	Introduction to Geometries (3)

MATH A306	Discrete Methods (3)
MATH A314	Linear Algebra (3)
MATH A321	Analysis of Several Variables (3)
MATH A324	Advanced Calculus (3)
MATH A371	Stochastic Processes (3)
MATH A407	Mathematical Statistics I (3)
MATH A408	Mathematical Statistics II (3)
MATH A410	Introduction to Complex Analysis (3)
MATH A422	Partial Differential Equations (3)
STAT A253	Applied Statistics for the Sciences (4)
	or
STAT A307	Probability and Statistics (4)
STAT A308	Intermediate Statistics for the Sciences (3)
STAT A402	Scientific Sampling (3)
STAT A403	Regression Analysis (3)
STAT A404	Analysis of Variance (3)
STAT A405	Nonparametric Statistics (3)
STAT A407	Time Series Analysis (3)
STAT A408	Multivariate Statistics (3)
STAT A490	Selected Topics in Statistics (1-3)

d. A minimum of 9 credits must come from the following Social Sciences Course List for the Environmental Sciences Option: 9

ANTH A101	Introduction to Anthropology (3)
ANTH A202	Cultural Anthropology (3)
ANTH A205	Biological Anthropology (3)
ANTH A335	Native North Americans (3)
ANTH A354	Culture and Ecology (3)
ANTH A415	Applied Anthropology (3)
ANTH A445	Evolution of Humans and Disease (3)
CEL A292	Introduction to Civic Engagement (3)
CEL A390	Selected Topics in Civic Engagement (1-3)
ECON A201	Principles of Macroeconomics (3)
ECON A202	Principles of Microeconomics (3)
ECON A210	Environmental Economics and Policy (3)
ECON A300	The Economy of Alaska (3)
ECON A321	Intermediate Microeconomics (3)
ECON A324	Intermediate Macroeconomics (3)
ECON A435	Natural Resource Economics (3)
ENVI/ PHIL A303	Environmental Ethics (3)
ENVI A470	Environmental Planning and Problem Solving (4)
ENVI A490	Topics in Environment and Society (3)
GEOG A101	Local Places/Global Regions: An Introduction to Geography (3)

LSSS A311	People, Places and Ecosystems (3)	
SOC A101	Introduction to Sociology (3)	
SOC A404	Environmental Sociology (3)	

Pre-Health Professions Option (80 credits)

1. Complete the following required courses (~~24~~ 22 credits):

~~BIOL A115~~	~~Fundamentals of Biology I~~	~~4~~
~~BIOL A116~~	~~Fundamentals of Biology II~~	~~4~~BIOL A108 Principles and Methods in Biology 6
CHEM A105	General Chemistry I	3
CHEM A105L	General Chemistry I Laboratory	1
CHEM A106	General Chemistry II	3
CHEM A106L	General Chemistry II Laboratory	1
PHYS A123	Basic Physics I	3
PHYS A123L	Basic Physics I Laboratory	1
PHYS A124	Basic Physics II	3
PHYS A124L	Basic Physics II Laboratory	1

2. Complete an additional ~~56~~ 58 credits of degree electives from the approved course lists for the Pre-Health Professions Option.
   a. A minimum of 32 credits must be upper division.
   b. A minimum of 24 credits must come from the following Natural Sciences Course List for the Pre-Health Professions Option: 24

BIOL A111	Human Anatomy and Physiology I (4)
BIOL A112	Human Anatomy and Physiology II (4)
BIOL/ CPLX A200	Introduction to Complexity (3)
BIOL A240	Introductory Microbiology for Health Sciences (4)
	or
BIOL A340	~~General Microbiology~~Microbial Biology (~~5~~3)
	and
BIOL A342	Experiential Learning: Microbial Biology (4)
BIOL A242	Fundamentals of Cell Biology (3)
BIOL A252	Principles of Genetics (3)
BIOL A243	Experiential Learning: Genetics and Cell Biology (4)
~~BIOL A242~~	~~Fundamentals of Cell Biology (4)~~
~~BIOL A252~~	~~Principles of Genetics (4)~~
BIOL A310	Principles of Animal Physiology (~~4~~3)
BIOL A320	Vertebrate Biology (3)
BIOL A321	Experiential Learning: Vertebrate Biology (2)
BIOL A403	Experiential Learning: Microscopical Tissue Techniques ~~Microtechnique~~ (~~4~~6)
BIOL A408	Experiential Learning: Scanning Electron Microscopy (SEM) (6)
BIOL A412	Behavioral Endocrinology (3)
BIOL A413	Neurophysiology (3)
BIOL A414	Chronobiology (3)
BIOL A415	Comparative Animal Physiology (3)

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BIOL A416 Exercise Physiology (3)
~~BIOL A425 Mammalogy (3)~~
BIOL A451 ~~Applied Microbiology~~Microbial Biotechnology (3)
BIOL A452 Human Genome (3)
BIOL A454 Experiential Learning: Microbial Biotechnology (4)
BIOL A455 Experiential Learning: Bioinformatics (4)
BIOL/CHEM/
PHYS A456 Nonlinear Dynamics and Chaos (3)
BIOL A461 Molecular Biology (3)
~~BIOL A461L Molecular Biology Laboratory (3)~~
BIOL A462 Virology (3)
BIOL A463 Molecular Biology of Cancer (3)
BIOL A464 Metals in Biology (3)
BIOL A465 Experiential Learning: Molecular Biology (4)
BIOL/
CHEM A471 Immunology (3)~~chemistry (4)~~
BIOL A487 Comparative Anatomy of Vertebrates (4)
BIOL A488 Experiential Learning: Developmental Biology (4)
BIOL A489 Population Genetics and Evolutionary Processes (3)
BIOL A490 Selected Lecture Topics in Biology (1-3)
BIOL A490L Selected Laboratory Topics in Biology (1-3)
BIOL A492 Undergraduate Seminar (1)
BIOL A495A Internship in the Biological Sciences (3)
BIOL A498 Individual Research (1-6)
CHEM A311 Physical Chemistry: A Biological Orientation (3)
CHEM A312 Quantitative Analysis (5)
CHEM A321 Organic Chemistry I (3)
CHEM A322 Organic Chemistry II (3)
CHEM A323L Organic Chemistry Laboratory (2)
CHEM A434 Instrumental Methods (5)
CHEM A441 Principles of Biochemistry I (3)
CHEM A442 Principles of Biochemistry II (3)
CHEM A443 Biochemistry Laboratory (2)
CHEM A460 Chemical Ecotoxicology (3)
CHEM A492 Undergraduate Seminar (1)
CHEM A498 Individual Research (3)

c. A minimum of (15) credits must come from the following Social Sciences Course List for the Pre-Health Professions Option: 15

ANTH A101 Introduction to Anthropology (3)
ANTH A205 Biological Anthropology (3)
ANTH A324 Psychological Anthropology (3)
ANTH A365 Modern Human Biological Diversity (3)
ANTH A445 Evolution of Humans and Disease (3)

ANTH A455	Medical Anthropology (3)
ANTH A457	Food and Nutrition: An Anthropological Perspective (3)
ANTH A485	Human Osteology (4)
ANTH A486	Applied Human Osteology (3)
ANTH A490	Selected Topics in Anthropology (1-3)
ECON A201	Principles of Macroeconomics (3)
ECON A202	Principles of Microeconomics (3)
HS A210	Introduction to Environmental Health (3)
HS A220	Core Concepts in the Health Sciences (3)
HS A230	Introduction to Global Health (3)
HS A326	Introduction to Epidemiology (3)
HS A492	Senior Seminar: Contemporary Health Policy (3)
PHIL A302	Biomedical Ethics (3)
PSY A111	General Psychology (3)
PSY A143	Death and Dying (3)
PSY A150	Lifespan Development (3)
PSY A260	Statistics for Psychology (3)
PSY A260L	Statistics for Psychology Lab (1)
PSY A261	Research Methods in Psychology (4)
PSY A345	Abnormal Psychology (3)
PSY A355	Learning and Cognition (4)
PSY A366	Perception (3)
PSY A368	Personality (3)
PSY A370	Behavioral Neuroscience (3)
PSY A412	Foundations of Modern Psychology (3)
PSY A420	Conducting Research in Psychology (3)
PSY A425	Clinical Psychology (3)
PSY A428	Evolutionary Psychology (3)
PSY A450	Adult Development and Aging (3)
PSY A455	Mental Health Services in Alaska (3)
PSY A485	Health Psychology (3)
PSY A498	Individual Research (3)

d. A minimum of 9 credits must come from the following Math and Computational Skills Course List for the Pre-Health Professions Option: 9

MATH A200	Calculus I (4)
	or
MATH A272	Applied Calculus (3)
MATH A201	Calculus II (4)
MATH A202	Calculus III (4)
MATH A215	Introduction to Mathematical Proofs (3)
MATH A231	Introduction to Discrete Mathematics (3)
MATH A302	Ordinary Differential Equations (3)
MATH A303	Introduction to Modern Algebra (3)
MATH A305	Introduction to Geometries (3)

MATH A306	Discrete Methods (3)
MATH A314	Linear Algebra (3)
MATH A321	Analysis of Several Variables (3)
MATH A324	Advanced Calculus (3)
MATH A371	Stochastic Processes (3)
MATH A407	Mathematical Statistics I (3)
MATH A408	Mathematical Statistics II (3)
MATH A410	Introduction to Complex Analysis (3)
MATH A422	Partial Differential Equations (3)
MATH A490A	Selected Topics in Pure Mathematics (1-3)
MATH A490B	Selected Topics in Applied Mathematics (1-3)
MATH A498	Individual Research (1-3)
STAT A253	Applied Statistics for the Sciences (4)
	or
STAT A307	Probability and Statistics (4)
STAT A308	Intermediate Statistics for the Sciences (3)
STAT A402	Scientific Sampling (3)
STAT A403	Regression Analysis (3)
STAT A404	Analysis of Variance (3)
STAT A405	Nonparametric Statistics (3)
STAT A407	Time Series Analysis (3)
STAT A408	Multivariate Statistics (3)
STAT A490	Selected Topics in Statistics (1-3)

General Sciences Option (80 credits)

1. Complete the following required courses (~~32~~ 30 credits):

~~BIOL A115~~	~~Fundamentals of Biology I~~	~~4~~
~~BIOL A116~~	~~Fundamentals of Biology II~~	~~4~~
BIOL A108	Principles and Methods in Biology	6
CHEM A105	General Chemistry I	3
CHEM A105L	General Chemistry I Laboratory	1
CHEM A106	General Chemistry II	3
CHEM A106L	General Chemistry II Laboratory	1
GEOL A111	Physical Geology	4
GEOL A221	Historical Geology	4
PHYS A123	Basic Physics I (3)	8
PHYS A123L	Basic Physics I Laboratory (1)	
	and	
PHYS A124	Basic Physics II (3)	
PHYS A124L	Basic Physics II Laboratory (1)	
	or	
PHYS A211	General Physics I (3)	
PHYS A211L	General Physics I Laboratory (1)	
	and	
PHYS A212	General Physics II (3)	
PHYS A212L	General Physics II Laboratory (1)	

2. Complete an additional ~~48~~ 50 credits of degree electives.~~48~~50

a. The credits may come from the following course lists:

i. Environmental Sciences Option Course Lists (above)

ii. Pre-Health Professions Course Lists (above)

iii. General Sciences Additional Course List

ASTR A103	Solar System Astronomy (3)
ASTR A103L	Solar System Astronomy Laboratory (1)
ASTR A104	Stars, Galaxies and Cosmology (3)
ASTR A104L	Stars, Galaxies and Cosmology Laboratory (1)
PHYS A311	Intermediate Classical Mechanics (3)
PHYS/EE A314	Electromagnetics (3)
PHYS A320	Simulation of Physical Systems (3)
PHYS/EE A324	Electromagnetics II (3)
PHYS A403	Quantum Mechanics (3)
PHYS A413	Statistical and Thermal Mechanics (3)
PHYS A498	Individual Research (1-6)

b. At least two of the following disciplines must be represented at the upper division level: Astronomy, Biology, Chemistry, Geology, Mathematics, Physics, Statistics.

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