Undergraduate Academic Board
Agenda

October 31, 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)

III. Approval of Meeting Summary (pg. 2-3)

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. Program/Course Action Request- Second Readings

	Chg	BIOL A481	Marine Biology (GER)(3 cr)(3+0)(pg. 4-8)
	Chg	BIOL A489	Population Genetics and Evolutionary Processes (GER)(3 cr)(3+0)(pg. 9-12)

VII. Program/Course Action Request- First Readings

	Chg	CIS A345	Managing Data Communications and Computer Networks (3 cr)(3+0)(pg. 13-16)
	Chg	CIS A365	Object-Oriented Programming (3 cr)(3+0)(pg. 17-22)
	Chg	CIS A390	Selected Topics in Management Information Systems (1-6 cr)(1-6+0)(pg. 23-26)
	Chg	PRPE A108	Introduction to College Writing (3 cr)(3+0)(pg. 27-33)
	Chg		Associate of Applied Science, Process Technology (pg. 34-43)

VIII. Old Business

IX. New Business

X. Informational Items and Adjournment

Undergraduate Academic Board
Summary

October 24, 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)
(e) Kevin Keating (LIB)
(x) Rick Adams (KPC)
(x) Sheri Denison (Mat-su)
(x) Jared Griffin (Kod)
( ) Christina Stuive (ADV)

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

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

III. Approval of Meeting Summary (pg. 2-3)
Approved

IV. Administrative Report

A. Vice Provost for Undergraduate Academic Affairs Susan Kalina

B. University Registrar Lora Volden
Spring courses become viewable on Monday, October 27th

V. Chair's Report

A. UAB Chair- Francisco Miranda

B. GERC

VI. Program/Course Action Request- Second Readings

VII. Program/Course Action Request- First Readings

Add FIRE A231 Firefighter II (4 cr)(2+6)(pg. 4-9)
Waive first, approve for second

Add ME A451 Aerodynamics (stacked with ME A651)(3 cr)(3+0)(pg. 10-14)
Waive first, approve for second

Add ACCT A422 Justice for Fraud Victims (3 cr)(3+0)(pg. 15-19)
Waive first, approve for second

Chg CIS A345 Managing Data Communications and Computer Networks (3 cr)(3+0)(pg. 20-23)

Chg CIS A365 Object-Oriented Programming (3 cr)(3+0)(pg. 24-29)

Chg CIS A390 Selected Topics in Management Information Systems (1-6 cr)(1-6+0)(pg. 30-33)

VIII. Old Business

IX. New Business

A. General University Requirement related to catalog year (pg. 34)
The UAB unanimously approved this proposal.

X. Informational Items and Adjournment

A. Memo re: JPC Contact Hour Catalogue Edits (pg. 35)
The UAB unanimously approved this proposal.

B. Faculty Alliance Motion 2014-01: Statewide Minimum Admissions Standards for Baccalaureate Programs (pg. 36-37)
Third paragraph change to Registrar

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)*
Examines 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. Studies 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:	Examines 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. Studies 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 uniquely linked to their habitat, and how changes in that habitat may influence species diversity and abundance through impacts on physiological properties
6. Relate current issues in Alaskan marine ecosystems and resources with a focus on balancing the many values represented in our environment.
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:	Graded Assessment Measures	Integrative Capstone Goals
1. Identify and assess the linkages between the chemistry and physiology of living organisms and the physical and biological aspects of the marine environment.	Written reviews of scientific literature, in class team based learning exercises, examinations	Knowledge integration, critical thinking, effective communication
2. Integrate knowledge from scientific articles, lecture, and textbook assignments to evaluate the scientific accuracy of popular press (TV, newspaper, magazine, web) reports on marine issues.	Examinations, written case studies, in class reports and/or presentations	Effective communication, information literacy, critical thinking, knowledge integration
3. Communicate to peers an understanding of the marine ecosytem, and the direct and indirect impacts that humans are having on the system.	In-class presentations and team based learning exercises	Effective communication, information literacy, critical thinking
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.	Project report, examination	Effective communication, quantitative perspectives, information literacy, knowledge integration

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

*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

Levinton, J.S. Marine Biology: Function, Biodiversity, Ecology. 4th Edition. Oxford University Press, 576pp. 2013.

Overpeck, J.T., M. Sturm, J.A. Francis, D.K., Perovich, et. Al. 2005. Arctic System on Trajectory to new, seasonally ice-free state. EOS 86 (34): 309,312-313.

Springer et al. Springer, A.M., Estes, J.A., van Vliet, G.B., Williams, T.M., Doak, D.F., Danner, E.M., Forney, K.A., Pfister, B., 2003. Sequential megafaunal collapse in the North Pacific Ocean: an ongoing legacy of industrial whaling? Proceedings of the National Academy of Sciences 100 (21), 12,223–12,228.

*Seminal works

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)*
Examines the primary forces and processes involved in shaping genetic variation in natural populations. Evaluates and applies methods of measuring genetic variation in nature.

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)*
Senior standing. 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:	Examines the primary forces and processes involved in shaping genetic variation in natural populations. Evaluates and applies methods of measuring genetic variation in nature.
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. Teach students to evaluate and integrate information from a variety of sources and perspectives.

B. Student Learning Outcomes and Assessment Measures

Students will be able to	Graded Assessment Measures	Integrative Capstone Goals
1. Integrate knowledge from	Exams, written	Knowledge

scientific articles, lecture, and textbook to evaluate the scientific accuracy of reports from the popular.	assignments, in-class presentations.	integration, critical thinking, information literacy
2. Demonstrate an in-depth understanding microevolution mechanisms and macroevolutionary patterns.	Exams and written assignments	Information literacy, quantitative perspectives
3. Analyze and explain current controversies surrounding evolution and evolutionary processes	Written assignments, in-class presentations.	Effective communication, critical thinking
4. Demonstrate critical understanding of evolutionary processes through generation and interpret scientific data in graphic and tabular form	Written assignments, exams	Critical thinking, quantitative perspectives

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

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 Fisher's Fundamental Theorem of Natural Selection (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
   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.

*****Seminal Works

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

1a. School or College	1b. Division	1c. Department
CB CBPP	ADBP Division of Business Programs	CIS

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
CIS	A345	N/A	3	(3+0)

6. Complete Course Title
Managing Data Communications and Computer Networks
Managing Data Comms & Networks
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 Update 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: /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. Business Computer Information Systems, AAS	1/17/2014	Minnie Yen
2. Management Information Systems, BBA	1/17/2014	Minnie Yen
3. CIS A445	1/17/2014	Minnie Yen

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

13b. Coordination Email Date: 02/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 02/07/2014

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 rapidly changing environment of data communications over local area networks and over switched and private voice lines. Focuses on the control and management of data in a distributed environment, the technology issues associated with data communications, and current trends in the industry.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
CIS A110 with a 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)*
College of Business and Public Policy majors must be admitted to upper-division standing.

17. ☐ Mark if course has fees Standard CBPP computer lab fee

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Change of prerequisite. Update of outline, textbooks, and bibliography.

Initiator (faculty only) Date
Yoshito Kanamori
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 CONTENT GUIDE
UNIVERSITY OF ALASKA ANCHORAGE
COLLEGE OF BUSINESS AND PUBLIC POLICY

I. Date Initiated January 17, 2014

II. Course Information

College/School: College of Business and Public Policy
Department: Computer Information Systems
Program: Bachelor of Business Administration, Management Information Systems; Associate of Applied Science, Business Computer Information Systems
Course Title: Managing Data Communications and Computer Networks
Course Number: CIS A345
Credits: 3
Contact Hours: 3 per week x 15 weeks = 45 hours
0 lab hours
Approximately 6 to 10 hours outside of class per week x 15 weeks = 90 to 150 hours
Grading Basis: A-F
Course Description: Introduces the rapidly changing environment of data communications over local area networks and over switched and private voice lines. Focuses on the control and management of data in a distributed environment, the technology issues associated with data communications, and current trends in the industry.
Course Prerequisites: CIS A110 with a minimum grade of C
Registration Restrictions: College of Business & Public Policy majors must be admitted to upper-division standing.
Fees: Standard CBPP computer lab fee

III. Course Activities

A. Lectures
B. Lab assignments
C. Project assignments

IV. Course Level Justification

Students are expected to be familiar with computer concepts, including operating systems and computer hardware/software basics, and are expected to integrate this knowledge to understand how the computers exchange data.

V. Outline

A. Historical Perspective on Communications, Information Systems and Data Networks

B. TCP/IP Layer Model – Five Layers

C. Support Services for Local Area Networks
   1. DHCP
   2. NAT/NAPT
   3. ARP
   4. DNS

D. Subnetting

E. Routing

F. Wide Area Networks

G. Wireless Networks

H. Phone Networks

I. Network Security

J. Management Issues

VI. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. **The instructor will:**
1. Present technical requirements and justification of telecommunications networks based upon their business requirements. Present an analysis of the business implications of each technical concept.
2. Describe communications protocols focusing on the roles of standards and layered models.
3. Explain the differences between analog and digital formats including signal modulation formats and flow control.
4. Describe the architecture and the protocols supporting data networks of local through wide area types for both wired and wireless technologies.
5. Present the need and the methods for securing access to networks.
6. Discuss purposes and implications of network design and management.
7. Engage students in understanding the business and technical implications of emerging topics.

B. Student Learning Outcomes. Students will be able to:	Assessment Method
1. Evaluate technical requirements of telecommunications networks and be able to justify them based upon business requirements.	Exams Quizzes
2. Identify the need for communications protocols and identify standards and network layers where the protocols operate.	Lab assignments
3. Explain why and where analog and digital formats are used in existing communications systems.	Exams Quizzes
4. Describe the architecture and the protocols supporting data networks of local through wide area types, including both wired and wireless technologies. Be able to install, configure, and debug a small local area network.	Exams Quizzes Lab assignments
5. Identify the security needs of an organization and suggest the means for securing access to networks.	Exams Quizzes
6. Design a small local area network and be able to justify the architectural and technology choices.	Exams Quizzes

VII. Suggested Text

Agrawal, M. (2011). *Business data communications,* Hoboken, NJ: John Wiley and Sons, Inc.

VIII. Bibliography

FitzGerald, J. & Dennis, A. (2012). *Business data communications and networking* (11th ed.). Hoboken, NJ: John Wiley and Sons, Inc.

Pintello, T. (2013). *Introduction to networking with Network+*. Hoboken, NJ: John Wiley and Sons, Inc.

Stallings, W. & Case, T. (2013). *Business data communications- infrastructure, networking and security* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

White, C. (2013). *Data communications and computer networks: A business user's approach.* Stamford, CT: Cengage 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
CB CBPP	ADBP Division of Business Programs	CIS

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
CIS	A365	N/A	3	(3+0)

6. Complete Course Title
Object-Oriented Programming

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
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement
- ☒ Other Update CCG (please specify)

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. Management Information Systems, BBA	01/17/2014	Minnie Yen
2. Management Information Systems, Minor	01/17/2014	Minnie Yen
3. CIS A489	01/17/2014	Minnie Yen

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

13b. Coordination Email Date: 02/07/2014
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 02/07/2014

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 basic concepts of Object-Oriented (OO) programming languages. Some of the recent relevant developments and applications will be discussed. The OO programming languages such as C++ or Java will be used as a vehicle for illustrating the concepts discussed in the course. OO programming design and programming development patterns will be covered. Students will analyze and solve business problems and practice writing programs for business applications using a chosen programming language.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
CIS A361 with a 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)*
College of Business and Public Policy majors must be admitted to upper-division standing.

17. ☐ Mark if course has fees Standard CBPP computer lab fee

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Changed prerequisite and update textbooks and bibliography.

Initiator (faculty only)	Date	☐ Approved ☐ Disapproved	Dean/Director of School/College	Date
Yoshito Kanamori 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

COURSE CONTENT GUIDE
UNIVERSITY OF ALASKA ANCHORAGE
COLLEGE OF BUSINESS AND PUBLIC POLICY

I. Date Initiated January 17, 2014

II. Course Information

College/School: College of Business and Public Policy
Department: Computer Information Systems
Program: Bachelor of Business Administration, Management Information Systems; Minor, Computer Information Systems
Course Title: Object-Oriented Programming
Course Number: CIS A365
Credits: 3
Contact Hours: 3 per week x 15 weeks = 45 hours
0 lab hours
6 hours outside of class per week x 15 weeks = 90 hours
Grading Basis: A-F

Course Description:
Covers basic concepts of Object-Oriented (OO) programming languages. Some of the recent relevant developments and applications will be discussed. The OO programming languages such as C++ or Java will be used as a vehicle for illustrating the concepts discussed in the course. OO programming design and programming development patterns will be covered. Students will analyze and solve business problems and practice writing programs for business applications using a chosen OO programming language.

Course Prerequisites: CIS A361 with a minimum grade of C

Registration Restrictions: College of Business and Public Policy majors must be admitted to upper-division standing.

Fees: Standard CBPP computer lab fee

III. Course Activities

A. Lectures
B. Discussions
C. Programming analysis exercises

IV. Course Level Justification

Course requires CIS A361 as a prerequisite. CIS A365 is a MIS major elective course that provides more depth than basic programming principles.

V. Outline

A. The Object-Oriented Paradigm
   1. Introduction
   2. Processing Modeling and the Unified Modeling Language (UML)
   3. OO program design patterns
B. Designing Object-Oriented Applications to Solve Organizational Problems
C. Developing Object-Oriented Applications in OO Programming Language
   1. Designing classes
   2. Using I/O streams
   3. Structured elements
   4. Arrays
   5. Strings
   6. Overloading
   7. Inheritance and polymorphism
D. Exploring Development Environment Available for OO Programming Languages
E. Object-Oriented Program Development in a Client/Server Environment with Database Connectivity

VI. Instructional Goals and Student Learning Outcomes

A. Instructional Goals. **The instructor will:**
1. Explain the concepts of analysis, design and implementation for OO programs.
2. Provide additional in-depth information on new developments in the field of OO programming.
3. Provide an introduction to OO programming techniques and their development environment.
4. Demonstrate OO program development with database connectivity in a client/server environment.
5. Explain basic design patterns in OO programming by using the chosen OO programming language.
6. Guide students in individual projects and team projects that require the application of advanced business analysis tools to develop and test computer application programs to solve business problems.

B. Student Learning Outcomes. Students will be able to:	Assessment Method
1. Articulate basic issues involved in object-oriented systems.	Homework In-class activities Quizzes Programs Final Project
2. Develop an object-oriented model for a business system of medium complexity.	Homework In-class activities Quizzes Programs Final Project
3. Build working object-oriented programs in an OO programming language.	Homework In-class activities Quizzes Programs Final Project
4. Develop OO programs connected with database in a client/server environment.	Homework In-class activities Quizzes Programs Final Project
5. Demonstrate understanding of basic design patterns used in OO programming.	Homework In-class activities Quizzes Programs Final Project

VII. Suggested Text

Dietel, P. & Dietel, H. (2011). *JAVA: How to program* (9th ed.). Upper Saddle River, NJ: Prentice Hall.

VIII. Bibliography

Clark, D. (2013). *Beginning C# Object-Oriented Programming* (2nd ed.). New York, NY: Apress.

Murach, J. (2011). *Murach's Java programming* (4th ed.). Fresno, CA: Mike Murach & Associates.

Sarang, P. (2012). *Java programming* (Oracle Press). New York, NY: McGraw-Hill Osborne Media.

Schildt, H. (2011). *Java: The complete reference* (8th ed.). New York, NY: McGraw-Hill Osborne Media.

Troelsen, A. (2012). *Pro C# 5.0 and the .NET 4.5 Framework* (6th ed.). New York, NY: Apress.

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

1a. School or College	1b. Division	1c. Department
CB CBPP	ADBP Division of Business Programs	CIS

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
CIS	A390	N/A	1-6	(1-6+0)

6. Complete Course Title
Selected Topics in Management Information Systems
Selected Topics in MIS
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 Update 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 Max Credits 9

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. Management Information Systems, BBA	10/17/2013	Minnie Yen
2. Management Information Systems, Minor	10/17/2013	Minnie Yen
3.		

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

13b. Coordination Email Date: _____
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)*
Study of specific current issues, techniques, and trends in Management Information Systems (MIS)
Special note: May be repeated with change of subtitle/topic. Maximum of 9 elective credits may be used for the BBA MIS degree. Prerequisites vary with topic. Check course schedule for specific titles being offered.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
N/A

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

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

16d. Registration Restriction(s) *(non-codable)*
College of Business and Public Policy majors must be admitted to upper-division standing.

17. ☐ Mark if course has fees Standard CBPP computer lab fee

18. ☒ Mark if course is a selected topic course

19. Justification for Action
Changed prerequisite. Updated textbooks and bibliography.

Initiator (faculty only) Date
Yoshito Kanamori
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 CONTENT GUIDE
UNIVERSITY OF ALASKA ANCHORAGE
COLLEGE OF BUSINESS AND PUBLIC POLICY

I. Date Initiated January 17, 2014

II. Course Information

College/School: College of Business and Public Policy
Department: Computer Information Systems
Program: Bachelor of Business Administration in Management Information Systems
Course Title: Selected Topics in Management Information Systems
Course Number: CIS A390
Credits: 1-6
Contact Hours: 1 hour per week x 15 weeks = 15 hours for each lecture hour
0 lab hours
4 hours outside of class per week x 15 for each lecture hour
Grading Basis: A-F
Course Description:
Study of specific current issues, techniques, and trends in Management Information Systems (MIS)
Special note: May be repeated with change of subtitle/topic. Maximum of 9 elective credits may be used for the BBA MIS degree. Prerequisites vary with topic. Check course schedule for specific titles being offered.
Course Prerequisites: N/A
Registration Restrictions: College of Business and Public Policy majors must be admitted to upper-division standing.
Fees: Standard CBPP computer lab fee

III. Course Activities

A. Lectures
B. Discussions
C. Guest speakers
D. In-class exercises
E. Analysis of case studies
F. Simulations

IV. Course Level Justification

The course requires prerequisites that may vary with topic and the student is expected to have appropriate background in problem solving techniques related to business environment.

V. Course Outline

Course outline varies with topics.

Example from previously taught course (Information Security Assurance)

A. Introduction to Information Security
B. The Need for Security
C. Legal, Ethical, and Professional Issues in Information Security
D. Security Analysis
E. Planning for Continuity
F. Security Technology
G. Physical Security
H. Implementing Security
I. Information Security Maintenance

VI. Suggested Texts

Vary according to topic.

Example from previously taught course (Information Security Assurance)

Whitman, M. E., & Mattord, H. J. (2011). *Principles of information security* (4th ed.). Stamford, CT: Cengage Learning.

VII. Bibliography

Vary according to topic.

Example from previously taught course (Information Security Assurance)

Boyle, R. J., & Panko, R. (2012). *Corporate Computer Security* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

Stallings, W., & Brown, L. (2008). *Computer security: Principles and practice*. Upper Saddle River, NJ: Prentice Hall.

Vacca, J. R. (2013). *Computer and information security handbook* (2nd ed.). New York, NY: McGraw-Hill Osborne Media.

VIII. Instructional Goals and Student Learning Outcomes

Vary according to topic.

Example from previously taught course (Information Security Assurance)

A. Instructional Goals. **The instructor will:**
1. Demonstrate the integration of security, software, people, data, and telecommunications components in Information Systems (IS).
2. Engage students in classroom debates on the implications of emerging global threats to IS data.
3. Empower students to be able to perform customer investigation of security faults and protection of IS resources.

4. Guide students in developing analysis and database tools to support quantitative decision making related to security risk assessment and use of forensic tools to solve security problems.
5. Challenge students in identifying societal and business implications of information systems security risks and protection policies.

B. Student Learning Outcomes. Students will be able to:	**Assessment Method**
1. Apply the ethical legislative and regulatory issues of information security, as well as the role of public policy in shaping a global digital economy.	Homework Quizzes Exams
2. Investigate the role of computer forensics.	Homework Exams
3. Create suitable information assurance policies for a variety of systems.	Homework
4. Explain the basic theories, principles and concepts of computer security.	Homework Quizzes Exams
5. Analyze Information Security practices across a variety of business environments.	Homework Quizzes
6. Describe the issues and tasks surrounding the implementation and operation of an Information Assurance program.	Homework Quizzes
7. Define various information security processes and discuss their tangible and intangible benefits.	Homework Quizzes Exams
8. Describe the various security technologies including: firewalls, dial-up protection, access control.	Homework Quizzes Exams
9. Describe the various concepts of cryptography including types of ciphers, cryptographic algorithms.	In-class activities Quizzes Exams
10. Describe and design physical security measures.	Homework Exams
11. Develop an Information Assurance plan.	Project

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

1a. School or College	1b. Division	1c. Department
CT CTC	APRS Division of Preparatory Study	DEVL

2. Course Prefix	3. Course Number	4. Previous Course Prefix & Number	5a. Credits/CEUs	5b. Contact Hours (Lecture + Lab)
PRPE	A108	N/A	3 cr.	(3+0)

6. Complete Course Title
Introduction to College Writing
Intro to College Writing
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
- ☐ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☒ Course Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions
- ☐ General Education Requirement
- ☒ Other CCG outline and bibliography (please specify)

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. See attached coordination table		
2.		
3.		

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

13b. Coordination Email Date: 9/25/14
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 9/25/13

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)*
Preparation for ENGL A111 and alternative to ENGL A109. Introduces composition of multi-paragraph essays that conform to Standard American English for college writing. Includes critical reading skills to enhance students' writing. Continues intensive practice in punctuation, sentence combining, revising, and editing.

16a. Course Prerequisite(s) *(list prefix and number or test code and score)*
Appropriate score on placement test or a C or better in PRPE A086.

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
Change in prerequsite reflects integration of reading and writing courses. Content reflects evolution of writing pedagogy.

Initiator (faculty only) Date
Shannon Gramse
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. Revision Date: **September 19, 2014**

II. Course Information

A. College:	Community and Technical College
B. Course Title:	Introduction to College Writing
C. Course Subject/Number:	PRPE A108
D. Credit Hours:	3.0 Credits
E. Contact Time:	3+0 Contact Time
F. Grading Information:	A-F
G. Course Description:	Prepares students for ENGL A111 and alternative to ENGL A109. Introduces composition of multi-paragraph essays that conform to Standard American English for college writing. Includes critical reading skills to enhance students' writing. Continues intensive practice in punctuation, sentence combining, revising, and editing.
H. Status of Course:	Successful completion of this course leads directly to ENGL A111, a university General Education Requirement.
I. Lab Fees:	No
J. Coordination:	Yes
K. Course Prerequisites:	Appropriate score on placement test or a C or better in PRPE 086.

III. Course Activities

Lecture, discussion, group work, exams and quizzes, exercises, and editing and writing assignments.

IV. Evaluation

Course is graded; 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 some or all of the following: peer reviews and drafts, essays, exercises, reading discussions and activities, quizzes and exams, and attendance and participation.

V. Course Level Justification

This course is at the 100-level because it is designed to develop basic composition skills needed for successful completion of ENGL A111.

VI. Outline

A. Safety
   1. Campus
   2. Classroom

B. Multi-Paragraph Essay Development
   1. Recursive writing processes
   2. Assessing a rhetorical situation: context, audience, and purpose
   3. Developing a topic
   4. Formulating a thesis
   5. Generating details
   6. Crafting introductions and conclusions
   7. Revising for coherence and focus
   8. Editing and proofreading

C. Elements of Academic Writing
   1. Summary
   2. Response
   3. Exposition
   4. Analysis
   5. Synthesis
   6. Comparison
   7. Persuasion
   8. Bibliography
   9. Peer Review

D. Elements of Editing
   1. Conventional punctuation
   2. Standard usage
   3. Sentence patterns
   4. Correction of common errors
   5. Editing for style

E. Elements of College Reading
   1. Academic reading processes
   2. Annotating texts
   3. Identifying main ideas and supporting details
   4. Critical reading

F. Using and Documenting Sources
   1. Basic research strategies
   2. Evaluating sources for academic purposes
   3. Integrating paraphrases and quotations into essays
   4. Introduction to documentation and citation

G. College Writing Resources
   1. Dictionaries, thesauri, handbooks
   2. Library and digital databases
   3. Tutoring and other consultation services (online and face-to-face)
   4. Internet usage for college composition

VII. Instructional Goals and Student Learning Outcomes

A. Instructional Outcomes. The instructor will:
   1. Introduce elements of academic writing generated by specific purpose, including summary and response, explanatory, analytical, and persuasive writing.
   2. Demonstrate effective revision strategies.
   3. Review basic sentence patterns, grammar rules, and usage conventions.
   4. Introduce academic reading processes for writing purposes.
   5. Introduce basic research strategies and using sources for the purpose of developing and supporting ideas in essays.
   6. Explain the purpose of and appropriate use of resources available to support students' writing development.

B. Student Learning Outcomes and Assessment Measures

Upon successful course completion, the student will be able to:	**This outcome will be assessed by one or more of the following:**
Write brief (2-4 pages) academic essays shaped by effective writing processes and appropriately supported by texts to achieve specific purposes.	Writing exercises and writing assignments
Revise drafts to develop ideas, bring coherence and focus to essays, and accomplish intended purposes.	Peer reviews, drafts, writing exercises and assignments

Identify patterns of errors and edit for correctness.	Writing exercises, writing assignments, quizzes
Apply critical reading skills and appropriate reading processes to assigned readings and individualized research for use in basic academic essays.	Reading activities, exercises, writing assignments
Effectively integrate and appropriately document basic research in essays.	Writing assignments
Employ available resources to improve writing.	Writing assignments and activities

VIII. Suggested Texts

Cohen, S. (2014). *50 essays: A portable anthology* (4th ed.). Boston, MA: Bedford/St. Martins.

Hacker, D. (2011). *Rules for writers.* (7th ed.). Boston, MA: Bedford/St. Martins.

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

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

IX. Bibliography

Adams, P. (2009, September). An accelerated learning program: Throwing open the gates. *Journal of Basic Writing,* 28(2), 50-69.

Bartholomae, D. (2005). *Writing on the margins: Essays on composition and teaching.* Boston, MA: Bedford/St. Martin's.

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

Bernstein, S. (Ed.). (2007). *Teaching developmental writing: Background readings.* Boston, MA: Bedford/St. Martin's.

Butler, P. (Ed.). (2010). *Style and rhetoric in composition: A critical sourcebook.* Boston, MA: Bedford/St. Martin's.

Coxwell-Teague, D., & Lunsford, F. (Eds.). (2014). *First-year composition: From theory to practice.* Anderson, SC: Parlor.

*Freire, P. (2002). *Pedagogy of the oppressed.* New York, NY: Continuum

Glau, G. & Duttagupta, C. (2010). *The Bedford bibliography for teachers of basic writing.* (3rd ed.). Boston, MA: Bedford/St. Martin's.

*Halasek, K., & Highberg, N. (Eds.). (2001). *Landmark essays on basic writing* (Vol.18). Mahwah, NJ: Erlbaum.

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*Denotes classic text

TO: Elisha Baker, Provost and Vice Chancellor of Academic Affairs

THRU: Chairperson, Undergraduate Academic Board

THRU: Gary Turner, Director, Kenai Peninsula College

THRU: Jane Fuerstenau, Chairperson, Academic Review Board, KPC

FROM: Henry W. Haney, Co-Chair, Business & Industry Department, KPC

DATE: September 3, 2014

RE: Program Action Request (PAR) – AAS Process Technology

Provost Baker;

I am initiating a Program Action Request to establish a Pre-Major for the Associate of Applied Science Process Technology degree offered through the Kenai Peninsula Community College.

This is being done for the follow reasons:

1. In response to enrollment pressure;
2. In response to an inadequate and/or inconsistent knowledge base necessary for program success;
3. In response to students who are being placed in "pending status" for admission due to low test scores or academic standing, and are as a consequence denied financial aid.

The Pre-Major will identify required pre-requisites, set minimum grade parameters for those pre-requisites, establish requirements for full program admission status, and allow students who are pursuing the AAS-PRT to receive financial aid while they are qualifying for full admission to the PRT program. The following is a justification for this action.

Henry

++

The following changes are proposed to establish a Pre-Major for AAS Process Technology

Proposed Program Admission Requirements:

1. Unchanged → Satisfy the Application and Admission Requirements for Associate Degree Programs

2. Add → Completion of an advising session with PRT faculty advisor

   Rational → The advising session as presently listed in the current catalog, is not a part of the overall requirements for admission. The advising session specifically requires students to meet with a faculty advisor in the Process Technology program prior to registering for Process Technology courses. With the Pre-Major, the advising session would be become one of the overall admission requirements. Students would be required to meet with a faculty advisor in the Process Technology program prior to application for admission in pre-major or major status. This will facilitate the following:
   a. Assignment of a PRT advisor
   b. Review of students academic record
   c. Overview of proposed academic strategy and what is necessary for student success to complete an AAS Process Technology degree

3. Add → The following courses must be completed with a grade of "C" or better
    a. ENGLISH 111, or a higher level ENGL, or placement at a higher level
    b. MATH 105, or a higher level MATH, or placement at a higher level
    c. PRT A101 Introduction to Process Technology
    d. PHYS A115/L Physical Science, or PHYS A123/L Basic Physics I or completion of higher level Physics

Rational → Current English pre-requisite for admission is listed as "Placement for reading at the ENGL A111 level or above." This current pre-requisite is weak and does not consider necessary foundational writing knowledge and skills. Such training is especially important with consideration given to the increasing complexity of such written material as safety and environmental instructions and reports, equipment operating instructions, and incident investigations. Accurate understandable writing skills are becoming increasingly important in the Process Industry. A pre-major requirement of "completion of ENGL 111, with a minimum grade of C or better" would establish a student knowledge base necessary for the second required English course, and the required PRT core courses.

Rational → The current Math pre-requisite for admission is "Placement at the MATH A105 level or above, equivalent course, or appropriate ACT/SAT scores." Requiring as a minimum only placement at the MATH 105 level is not as strong as it should be for a pre-requisite. It is necessary for students to have completed MATH 105 with a "C" or better grade so as to verify experiential base knowledge and computational ability. This especially becomes important when recognizing that Math concepts permeate Process Technology at all levels, and that proven Math knowledge and ability is assumed by instructors when teaching Process Technology core classes. A pre-major requirement of "completion of MATH 105, or a higher level MATH, or placement at a higher level" would establish a solid student knowledge base necessary for demonstrated success when taking the required PRT core courses.

Rational → Introduction to Process Technology provides a basic broad overview of what Process Technology is. This course shows students what PRT is, and what they are entering into. Completion of this course will enable students to decide if they are going to continue pursuing the AAS-PRT degree.

Rational → The Pre-major requirement of Physical Science, or Basic Physics would provide the foundational scientific concepts necessary for students who will be entering into PRT core courses. These concepts are a necessity for a student to achieve success in the PRT field of study. The majority of students entering the PRT program demonstrate a weakness in Physics and Physics concepts. This is universal whether a student is recently graduated or is returning to school in middle-age. Physics consequently can be intimidating and is frequently avoided and not taken until the very last semester of a student's course of study. This needs to be rectified especially with consideration that Physics concepts are in all aspects of Process Technology. A pre-major requirement of "completion of PHYS A115/L Physical Science, or PHYS A123/L Basic Physics I or completion of higher level Physics" will insure students are adequately prepared to learn the core concepts of PRT

4. Add → (required form) Completion of Change of Major from Pre-Major to Major status signed by PRT faculty advisor

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Below is a very basic example of a typical schedule incorporating the proposed Pre-Major.
Note: additional semester(s) would be necessary for students who are unable to meet placement requirements for ENG 111 or MATH 105.

Admission to Pre-Major status program

On an as needed basis – requiring one or more semesters
Selected courses PRPE 82, PRPE 86, PRPE 108 to obtain placement into ENG 111
Selected courses MATH 054 and MATH 055 to obtain placement into Math 105

1st year Fall Semester
MATH A105 Intermediate Algebra with a minimum of grade of "C" (3 credits)
ENGL A111 Methods of Written Communication with a minimum of grade of "C" (3 credits)
PRT A101 Introduction to Process Technology with a minimum of grade of "C" (3 credits)
PHYS A115/L Physical Science or PHYS A123/L Basic Physics I with a minimum of grade of "C" (4 credits)
PRT A110 – Intro to Occupational Safety, Health & Environmental Awareness (3 credits)
Total - 16 credits

Admission to Major status program

1st year Spring Semester
ENGL A212 - Technical Writing (3 credits)
PRT A130 – Process Technology I: Equipment (4 credits)
CIS A105 (or A110) Introduction to PC Computers Applications (3 credits)
PRT A140 – Industrial Process Instrumentation I (3 credits)
Applied Elective (3 credits)
Total - 16 credits

2nd year Fall Semester
COMM A111 - Fundamentals of Oral Communication (3 credits)
PRT A144 - Industrial Process Instrumentation II (3 credits)
PRT A230/L – Process Technology II: Systems + Lab (4 credits)
CHEM A103/L – Survey of Chemistry + Lab (4 credits)
Applied Elective (3 credits)
Total - 17 credits

2nd year Spring Semester
PRT A231/L – Process Technology III: Operations (4 credits)
PRT A250 - Process Troubleshooting (3 credits)
PRT A255 – Quality Concepts for the Process Industry (1 credit)
Applied Elective (3 credits)
Social Science Elective (3 credits)
Total - 14 credits

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
KP KPC	Business and Industry

2. Complete Program Title/Prefix
Process Technology AAS

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: Spring/2015 To: /9999

6a. Coordination with Affected Units Department, School, or College: CTC and UAF CTC

Initiator Name (typed): Henry W Haney Initiator Signed Initials: _____
Date:_____

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu) Date: 9-3-14

6c. Coordination with Library Liaison Date: 9-3-14

7. Title and Program Description - Please attach the following:

☒ Cover Memo ☒ Catalog Copy in Word using the track changes function

8. Justification for Action
To manage admissions and improve student success rate in program.

Initiator (faculty only) Date

Henry W Haney
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

PROCESS TECHNOLOGY

Kenai Peninsula College (KPC), KRC (Kenai River Campus)
156 College Road, Soldotna, Alaska 99669, (907) 262-0300, (877) 262-0330
www.kpc.alaska.edu

Anchorage Extension Site (AES)
University Center (UC), Room 118, 3901 Old Seward Highway
Anchorage, AK 99503, (907) 786-6413

Advising for this program is only available from the Process Technology faculty at Kenai Peninsula College. For the Kenai River Campus, please call (907) 262-0344 or (877) 262-0330 for more information. For the KPC Anchorage Extension Site, call 786-6413.

The Associate of Applied Science degree in Process Technology is coordinated by Kenai Peninsula College and is delivered collaboratively through UAA and UAF.

This degree is designed to provide education/training that will enable individuals to obtain employment in the industries that use and control mechanical, physical or chemical processes to produce a final product. In Alaska this includes the process industries of oil and gas production, chemical manufacturing, petroleum refining; power generation and utilities, water and wastewater treatment, and seafood and other food processing.

Associate of Applied Science, Process Technology

The Process Technology program is offered only at Kenai Peninsula College KRC (Kenai River Campus) and AES (Anchorage Extension site).

The graduates of the UAA Process Technology program will have the ability to:

1. Maintain a safe work area: enforce safety regulations, follow safe operating procedures, maintain effective communications with personnel and identify workplace hazards.
2. Monitor area operations: to monitor equipment for efficiency and integrity, identify process problems and perform trend analyses.
3. Maintain process parameters: perform process adjustments, start up process equipment, shut down process equipment.
4. Maintain emergency response preparedness: respond to emergencies, effectively participate in emergency response drills and conduct periodic review of emergency response procedures.
5. Maintain regulatory compliance: to report recordable incidents, record discharge reports, record regulatory data, maintain current licensing, participate in internal/external audits and comply with HAZCOM requirements.
6. Coordinate maintenance activities: generate work requests, develop safe out procedures, schedule maintenance activities, prepare equipment for maintenance activity and issue work permits.
7. Perform administrative activities: produce required reports, record logbook entries and perform personnel evaluations.
8. Assess and recognize the need for continued professional development: participate in job related training and utilize self-study resources.

Admission Requirements

Students who apply to the Process Technology AAS are admitted in a pre-major status. The process for advancement to major status requires completion of the following steps:

1. Complete an advising session with a PRT faculty advisor.
2. Complete the following courses with a grade of "C" or better:
    a. ENGL A111 Introduction to Composition (3)
    b. MATH A105 Intermediate Algebra (3) or any higher level mathematics.
    c. PRT A101 Introduction to Process Technology (3)
    d. PHYS A115/L Physical Science with Lab (4) or PHYS A123/L Basic Physics I with Lab (4)
3. Completion of Change of Major Form from Pre-Major to Major status, signed by PRT faculty advisor.

Advising

Students are encouraged to meet with a faculty advisor in the Process Technology program prior to registering for Process Technology courses. Advising is required to move to major status and to complete the AAS in Process Technology.

Graduation Requirement

In order to receive the AAS in Process Technology, students must achieve a grade of "C" or better in all courses required for the degree.

General University Requirements

Complete the General University and the Associate of Applied Science Degree Course Requirements located at the beginning of this chapter.

Communication and General Requirements

1. **Oral Communications Skills:** (One of the following) 3

   COMM A111 Fundamentals of Oral Communication (3)
   COMM A235 Small Group Communication (3)
   COMM A237 Interpersonal Communication (3)
   COMM A241 Public Speaking (3)

2. **Written Communication Skills:** 6

   ENGL A111 Introduction to Composition (3)
   and one of the following:
   ENGL A211 Academic Writing About Literature (3)
   ENGL A212 Technical Writing (3)
   ENGL A213 Writing in the Social and Natural Sciences (3)
   ENGL A214 Persuasive Writing (3)
   CIOS A260A Business Communications (3)

3. **Math:** 3-4

   MATH A105* Intermediate Algebra (3)
   or
   MATH A107* College Algebra (4)

   **Or any MATH course for which MATH A105 or MATH A107 is a prerequisite.*

4. **Computer Literacy:** 3

   CIS A105 Introduction to Personal Computers and Application Software (3)
   or
   CIS A110 Computer Concepts in Business (3)

5. **Chemistry:** 4

   CHEM A103/L Survey of Chemistry (or higher level chemistry) with laboratory (4)

6. **Physics:** 4

   PHYS A115/L Physical Science with Laboratory (4)
   or
   PHYS A123/L Basic Physics I with Laboratory (4)

7. **Social Sciences or Humanities:** 3

   Elective (3)

Major Requirements

1. Complete the following courses (28 credits):

PRT A101	Introduction to Process Technology	3
PRT A110	Introduction to Process Safety, Health and Environmental Awareness	3
PRT A130	Process Technology I: Equipment	4
PRT A140	Industrial Process Instrumentation I	3
PRT A144	Industrial Process Instrumentation II	3
PRT A230	Process Technology II: Systems	4
PRT A231	Process Technology III: Operations	4
PRT A250	Process Troubleshooting	3
PRT A255	Quality Concepts for the Process Industry	1

2. Approved Applied Technology Electives: 9

   All 9 credits must be chosen with advisor approval. For example, they may be chosen from:

   - Electronics
   - Environmental Technology
   - Industrial Technology
   - Industrial Instrumentation
   - Mining Technology
   - Occupational Safety and Health
   - Petroleum Technology
   - Process Technology
   - Power Generation
   - Wastewater Technology
   - Technical Internship

3. A total of 63 credits is required for the degree.

FACULTY

Rick Adams, Assistant Professor, rhadams@kpc.alaska.edu
Henry Haney, Assistant Professor, hwhaney@kpc.alaska.edu
Jeff Laube, Assistant Professor, jdlaube@kpc.alaska.edu
Darrell Ellis, Assistant Professor, dwellis@kpc.alaska.edu
Tammy Farrell, Assistant Professor, tfarrel3@kpc.alaska.edu
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control mechanical, physical or chemical processes to produce a final product. In Alaska this includes the process industries of oil and gas production, chemical manufacturing, petroleum refining; power generation and utilities, water and wastewater treatment, and seafood and other food processing.

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3. Maintain process parameters: perform process adjustments, start up process equipment and shut down process equipment;
4. Maintain emergency response preparedness: respond to emergencies, effectively participate in emergency response drills and conduct periodic review of emergency response procedures;
5. Maintain regulatory compliance: report recordable incidents, record discharge reports, record regulatory data, maintain current licensing, participate in internal/external audits and comply with HAZCOM requirements;
6. Coordinate maintenance activities: generate work requests, develop safe out procedures, schedule maintenance activities, prepare equipment for maintenance activity and issue work permits;
7. Perform administrative activities~~: to~~ produce required reports, record logbook entries and perform personal evaluations;
8. ~~Prepare for and understand~~Assess and recognize the need for continued professional development~~;~~ participate in job related training and utilize self-study resources.

Admission Requirements

Students who apply to the Process Technology AAS are admitted in a pre-major status. The process for advancement to major status requires completion of the following steps:

1. Complete an advising session with a PRT faculty advisor.
2. Complete ~~university Admissions Requirements for Associate's Degrees found in Chapter 7~~the following courses with a grade of "C" or better:
   a. ENGL A111 Introduction to Composition (3)
   b. MATH A105 Intermediate Algebra (3), or any higher level mathematics.
   c. PRT A101 Introduction to Process Technology (3)

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d. PHYS A115/L Physical Science with Lab (4) or PHYS A123/L Basic Physics I with Lab (4)

~~1.~~3. Completion of Change of Major Form from Pre-Major to Major status, signed by PRT faculty advisor.~~.~~

~~2. Placement at the MATH A105 level or above, equivalent course, or appropriate ACT/SAT scores.~~

~~3. Placement for reading at the ENGL A111 level or above.~~

Advising

Students ~~must see~~are encouraged to meet with a faculty advisor in the Process Technology program prior to registering for Process Technology courses. Advising is required to move to major status and to complete the AAS in Process Technology.

Graduation Requirements

In order to receive the AAS in Process Technology, students must achieve a grade of "C" or better in all courses required for the degree.

General University Requirements

Complete the General University and the ~~General Course Requirements for~~ Associate of Applied Science Degree Course Requirements ~~s~~ located at the beginning of this chapter.

Communication and General Requirements

1. **Oral Communications Skills** (One of the following) 3

COMM A111	Fundamentals of Oral Communication (3)
COMM A235	Small Group Communication (3)
COMM A237	Interpersonal Communication (3)
COMM A241	Public Speaking (3)

2. **Written Communication Skills** 6

ENGL A111	Introduction to Composition (3)
	and one of the following:
ENGL A211	Academic Writing About Literature (3)
ENGL A212	Technical Writing (3)
ENGL A213	Writing in the Social and Natural Sciences (3)
ENGL A214	Persuasive Writing (3)
CIOS A260A	Business Communications (3)

3. ~~**Support Courses**~~ **Math** 3-4

MATH A105*	Intermediate Algebra (3)
	or
MATH A107*	College Algebra (4)

**Or any MATH course for which MATH A105 or MATH A107 is a prerequisite.*

4. **Computer Literacy:** 3

CIS A105	Introduction to Personal Computers and Application Software (3)
	or
CIS A110	Computer Concepts in Business (3)

5. **Chemistry** ~~8~~4

CHEM A103/L Survey of Chemistry (or higher level chemistry) with laboratory (4)

6. **Physics** 4

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~~and~~

PHYS A115/L Physical Science with Laboratory ~~I for Technicians~~ (4)

or

~~CHEM A103/L Survey of Chemistry (or higher level) (4)~~

~~and~~

PHYS A123/L Basic Physics I with Laboratory (4)

~~6.~~7. **Social Science~~s~~ or Humanities** 3

Elective (3)

Major Requirements

1. Complete the following courses (28 credits):

PRT A101	Introduction to Process Technology	3
PRT A110	Introduction to Process Safety, Health and Environmental Awareness	3
PRT A130	Process Technology I: Equipment	4
PRT A140	Industrial Process Instrumentation I	3
PRT A144	Industrial Process Instrumentation II	3
PRT A230	Process Technology II: Systems	4
PRT A231	Process Technology III: Operations	4
PRT A250	Process Troubleshooting	3
PRT A255	Quality Concepts for the Process Industry	1

2. Approved Applied Technology Electives 9

   All 9 credits must be chosen with advisor approval. For example, they may be chosen from:

   - Electronics
   - Environmental Technology ~~(Wastewater) Mining Technology~~
   - Industrial ~~Process~~ Technology
   - Instrumentation
   - Mining Technology
   - Occupational Safety and Health
   - Petroleum Technology
   - Process Technology
   - Power Generation
   - Technical Internship
   - ~~Technology~~
   - Wastewater

3. A total of 63 credits is required for the degree.

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