General Education Review Committee
Agenda

April 20, 2007
ROOM CHANGE: ADM 143
12:00 p.m. – 1:45 p.m.

I. Roll
( ) Doug Parry CAS Oral Communication
( ) Ben Curtis Mat-Su/UAB Natural Sciences
( ) Caedmon Liburd UAB
( ) Patricia Fagan CAS Humanities
( ) Dan Schwartz COE
( ) Jack Pauli CBPP/UAB
( ) Jeane Breinig CAS Written Communication
( ) Len Smiley CAS/UAB Quantitative Skills
( ) Robin Wahto CTC
( ) Walter Olivares CAS Fine Arts
( ) Tom Miller OAA Guest
( ) Vacant CHSW
( ) Grant Baker SOENGR/ UAB
( ) Vacant Student

II. Approval of the Agenda (pg. 1-2)

III. Approval of Meeting Summary for March 30, 2007 (pg. 3-4)

IV. Chair’s Report

V. Course Action Requests

A. Second readings
Chg CHEM A441 Principles of Biochemistry I (3 cr) (3+0) (pg. 5-12)
Chg BA A151 Introduction to Business (3 cr) (3+0) (pg. 13-20)

B. First readings
Chg ASTR A103 Introductory Astronomy I (3 cr) (3+0) (pg. 21-27)
Add ASTR A103L Introductory Astronomy I Lab (1 cr) (0+3) (pg. 28-34)
Chg ASTR A104 Introductory Astronomy II (3 cr) (3+0) (pg. 35-41)
Add ASTR A104L Introductory Astronomy II Lab (1 cr) (0+3) (pg. 42-49)
Chg PHYS A123 Basic Physics I (3 cr) (3+0) (pg. 50-56)
Chg PHYS A123L Basic Physics I Laboratory (3 cr) (0+3) (pg. 57-63)
Chg PHYS A124 Basic Physics II (3 cr) (3+0) (pg. 64-70)
Chg PHYS A124L Basic Physics II Laboratory (3 cr) (0+3) (pg. 71-77)
Chg PHYS A456 Nonlinear Dynamics and Chaos (3 cr) (3+0)
Chg CHEM A456 Nonlinear Dynamics and Chaos (3 cr) (3+0)
(stacked w/ PHYS A456 and BIOL A456) (pg. 80)

Chg BIOL A456 Nonlinear Dynamics and Chaos (3 cr) (3+0)
(stacked w/ CHEM A456 and PHYS A456) (pg. 80-86)

Chg GEOG A345 Across this Land: The Historical Geography of North America
(3 cr) (3+0) (stacked w/HIST A345 and INTL A345) (pg. 87)

Chg HIST A345 Across this Land: The Historical Geography of North America
(3 cr) (3+0) (stacked w/GEOG A345 and INTL A345) (pg. 88)

Chg INTL A335 Canada: Nation and Identity (3 cr) (3+0) (pg. 89-98)

Chg CIS A345 Managing Data Communications and Computer Networks
(3 cr) (3+0) (pg. 99-103)

Chg BIOL A102 Introductory Biology (3 cr) (3+0) (pg. 104-112)

Chg BIOL A103 Introductory Biology Laboratory (1 cr) (0+3) (pg. 113-117)

Chg BIOL A111 Human Anatomy and Physiology I (4 cr) (3+3) (pg. 118-121)

Chg BIOL A112 Human Anatomy and Physiology II (4 cr) (3+3) (pg. 122-125)

Chg BIOL A200 Introductory to Complexity (3 cr) (3+0)
(stacked w/CPLX A200) (pg. 126-135)

Add CPLX A200 Introductory to Complexity (3 cr) (3+0)
(stacked w/BIOL A200) (pg. 136-144)

Chg CA A495 Hospitality Internship (6cr) (2+40) (pg. 145-149)

VI. Old Business
   a. Capstone RFP Memo (pg. 150)
   b. Capstone MiniGrant Forms (pg. 151-152)

VII. New Business

VIII. Informational Items and Adjournment
General Education Review Committee
Summary

April 13, 2007
ROOM CHANGE: ADM 201
12:45 p.m. – 1:45 p.m.

I. Roll
(X) Doug Parry  CAS  Oral Communication
(X) Ben Curtis  Mat-Su/UAB  Natural Sciences
(X) Caedmon Liburd  UAB  Natural Sciences
(X) Patricia Fagan  CAS  Humanities
( ) Dan Schwartz  COE
(X) Jack Pauli  CBPP/UAB
(X) Jeane Breinig  CAS  Written Communication
(X) Len Smiley  CAS/UAB  Quantitative Skills
(X) Robin Wahto  CTC
( ) Walter Olivares  CAS  Fine Arts
(X) Tom Miller  OAA  Guest
( ) Vacant  CHSW
( ) Grant Baker  SOENGR/ UAB
( ) Vacant  Student

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

III. Approval of Meeting Summary for March 30, 2007 (pg. 2-3)
Pg. 2- change Theater remove “no revisions”
Approved

IV. Chair’s Report
Tier 1 and Tier 3 memo went out last week
General purpose capstones- fund 7

V. Course Action Requests

Chg  THR  A111  Introduction to Theatre (3 cr) (3+0) (pg. 4-8)
Approved

Chg  THR  A311  Representative Plays I (3 cr) (3+0) (pg. 9-13)
Approved

Chg  THR  A312  Representative Plays II (3 cr) (3+0) (pg. 14-18)
Approved

Chg  THR  A411  History of the Theatre I (3 cr) (3+0) (pg. 19-23)
Approved

Chg  THR  A412  History of the Theatre II (3 cr) (3+0) (pg. 24-28)
Approved

Add  THR  A104  Storytelling and Dramatic Interpretation (3 cr) (3+0)
(pg. 29-36)

Procedural clarification: Solely as Communications GER, not Fine Arts
Concern about shifting disciplines- should not be done on course by course basis, need to
be discussed before. Concern that GER was initiated by Deans office, not faculty. What
decisions are being made by this. According to Board of Regents this is a skills course.
Reasons for Deans office decision, Need additional courses in written and oral communication. Have taught communication from the department in the past.

Issues- Body of knowledge may be present in Theater, base body of knowledge in Communication that is not present in this course. Courses offered in Communication are discipline based, this course is not. Most institutions will not accept the courses as a Communication course. Level of enrollments- if this is to solve financial situations in department, there are other ways of doing it. Two positions in Communication were available, they have now disappeared. Numbers of enrollment are taken as a snapshot with excess students at the beginning of the year when department has planned for students dropping the course. Average 47% freshman, 25% sophomores. Only thing faculty owns is the curriculum. Should be brought together to see how things fit, before they come forward. Need to keep solidarity with each other. GER’s need dramatic change. But taking new model that was proposed by Dean will be long remembered. Request to postpone this approval, until the proper discussion is had. Needs to be chance for integration for students. Need to look at full consequences for this decision. Many Theater professors that can teach communication, many who are not. Instructional goals are present, but they are not in the outline. There is a deliberative process in place, it is the GER committee. Intent was to build course that is skills oriented. Focus on Tier 1 category. University only required one course in Oral Communication. Need understanding of communication skills, which do not seem to be present in this course. Do not see those skills, only see performance skills. Course outline emphasis is not on the core of communication, it is on storytelling. Is it too specialized to meet the overall goal of the Oral Communications GER. Concern with pedagogical foundation of the course.

Need to deal with the pedagogical question first. Does the content meet the goals of current category descriptor? General dissatisfaction with the course as it is currently designed. Chances of passing are minimal. Would the board accept this if it was revised?

**Move approval for GER (Len Smiley)**

*2nd (Caedmon Liburd)*

**For-0**

**Against- 7**

**Abstain- 1**

Chg CHEM A441 Principles of Biochemistry I (3 cr) (3+0) (pg. 37-43)

Request for revisions to be made and brought back

Chg BA A151 Introduction to Business (3 cr) (3+0) (pg. 44-51)

Tabled

Chg HNRS A490 Senior Honors Seminar (6 cr) (6+0) (pg. 52-58)

Reaffirm approval - approved

VI. Old Business

a. Tier 1 & Tier 3 Memo (pg. 59-60)

b. Capstone RFP Memo (pg. 61)

c. Capstone MiniGrant Forms (pg. 62-64)

VII. New Business

VIII. Informational Items and Adjournment

Meeting adjourned
### Curriculum Action Request

**University of Alaska Anchorage**

Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<tbody>
<tr>
<td>CAS</td>
<td>AMSC</td>
<td>CHEMISTRY</td>
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<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEU</th>
<th>5b. Contact Hours</th>
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<tbody>
<tr>
<td>CHEM</td>
<td>A441</td>
<td>N/A</td>
<td>3.0</td>
<td>(Lecture + Lab)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(3+0)</td>
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<thead>
<tr>
<th>6. Complete Course/Program Title</th>
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<tr>
<td>Principles of Biochemistry I</td>
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<th>7. Type of Course</th>
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<th>8. Type of Action</th>
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<th>9. Repeat Status No</th>
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<th>11. Implementation Date</th>
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<tr>
<td>From: FALL/2007</td>
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<td>To: /9999</td>
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<tr>
<th>12. Cross Listed with</th>
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<tbody>
<tr>
<td>CHEM A641</td>
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<tr>
<th>13. Coordinate with Affected Units:</th>
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<tbody>
<tr>
<td>Biology Department, Faculty listserv</td>
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<tr>
<td>Department, School, or College</td>
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<tr>
<th>14. List any programs or college requirements that require this course</th>
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<tbody>
<tr>
<td>Bachelor of Science in Chemistry (Chemistry Option and Biochemistry Option); Bachelor of Science, Biology</td>
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<th>15. General Education Requirement</th>
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<tr>
<td>Oral Communication</td>
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<td>Fine Arts</td>
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<th>16. Course Description</th>
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<tr>
<td>A study of the structure and function of amino acids, proteins, carbohydrates, nucleic acids, lipids and membranes. Special Note: Students who complete CHEM A441 as part of their undergraduate degree cannot receive credit towards their graduate degree from CHEM A641.</td>
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<th>17a. Course Prerequisite(s) (list prefix and number)</th>
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<th>17c. Corequisite(s) (concurrent enrollment required)</th>
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<th>17d. Other Restriction(s)</th>
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<td>College</td>
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<tr>
<th>17e. Registration Restriction(s) (non-codable)</th>
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<tr>
<th>18. Mark if course has fees</th>
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<tr>
<th>19. Justification for Action</th>
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Seeking integrated GER capstone status. Clarifying course prerequisites.

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**Initiator Signature**

**Date**

**Dean/Director of School/College**

**Date**

**Department Chairperson**

**Date**

**Undergraduate or Graduate Academic Board Chairperson**

**Date**

**Provost or Designee**

**Date**
I. **Date of Initiation: January 29, 2007**

II. **Course Information:**
   A. Course Subject/Number: CHEM A441
   B. 3.0 Credits, 3+0 Contact Hours
   C. Course Title: Principles of Biochemistry I
   D. Grading Basis: A-F
   E. Course Description: A study of the structure and function of amino acids, proteins, carbohydrates, nucleic acids, lipids and membranes. Special Note: Students who complete CHEM A441 as part of their undergraduate degree cannot receive credit towards their graduate degree from CHEM A641.
   F. Prerequisites: CHEM A322 and BIOL A115, both with a minimum grade of C
   G. Registration Restrictions: Junior standing. Completion of all GER Tier 1 (basic college level skills) courses. Completion of seven credits of GER Tier 2 courses in the Natural Sciences

III. **Instructional Goals and Student Outcomes**
   A. Instructional Goals. (The instructor will)
      1. **Encourage knowledge integration** by presenting biochemistry in an integrated context that relates knowledge from biology, chemistry and mathematics to understand macromolecular structure and function in the context of cellular function and human health.
         a. Presenting chemical, structural and functional features of amino acids, proteins, carbohydrates, nucleic acids, lipids and membranes problems that require relating content from multiple disciplines such as introductory biology, cell biology, genetics, physiology, or molecular biology for interpretation and application to problems specifically constructed for integrating concepts across these fields
         b. Elicit student presentation of their understanding of how to integrate biochemical subject matter through structured in-class discussion, presentations and authorship
         c. Structuring problem sets and exams with convergent questions that require transferring understanding of Mathematics, Chemistry, and Biology concepts to current biochemical problems
      2. **Encourage effective oral and written communication** by
         a. Setting up and structuring group dynamics of small discussion groups in the classroom and eliciting discussion on reading material consisting of primary literature articles for analysis
         b. Providing materials to accompany these primary research articles that are designed to require students to work together and to present orally and in writing with effective communication
      3. **Encourage critical thinking** by providing science reading assignments from primary literature, and requiring a written report (or oral presentation or in-class discussion) that provides students an opportunity to engage in critical assessments of the articles for clarity of the hypotheses, relevance of the experimental design, precision of the reported data, and a critique of whether the results appropriately support the authors’ conclusions.
      4. **Encourage information literacy** by assisting students in their own bibliographic search in
finding topics in current scientific literature for their writing assignments; providing assistance in applications of appropriate writing formats in creating a literature review in biochemistry and assistance in the analysis of a theoretical issue or practical application of biochemistry and propose future directions for theoretical research and/or practical consequences of that topic.

5. **Encourage quantitative perspectives and reasoning by**
   a. Providing problem sets that address quantitative aspects of Biology and Biochemistry and transferring those applications learned to new problems
   b. Providing appropriate primary scientific research literature

### B. Student Outcomes:

<table>
<thead>
<tr>
<th><strong>Student Outcomes – Students will:</strong></th>
<th><strong>Relationship to GER Capstone requirements</strong></th>
<th><strong>Assessment Strategies and Student Artifacts</strong></th>
</tr>
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<tbody>
<tr>
<td>Integrate knowledge from biology (introductory biology, cell biology, genetics, physiology, molecular biology); chemistry (general chemistry, organic chemistry); and math (algebra, calculus) to understand macromolecular structure and function in the broad contexts of science and human health</td>
<td>Knowledge Integration</td>
<td>Exams containing comprehensive, multidisciplinary convergent questions</td>
</tr>
<tr>
<td>Participate in in-class discussion of primary research literature critical reading assignments</td>
<td>Effective Communication</td>
<td>Oral (or written) presentations and in-class discussion work facilitated by the instructor</td>
</tr>
<tr>
<td>Analyze data from primary research literature, evaluate the articles, and suggest other or improved approaches to solve such problems</td>
<td>Critical Thinking</td>
<td>Convergent exam questions</td>
</tr>
<tr>
<td>Analyze and discuss quantitative aspects of biochemistry and biology</td>
<td>Quantitative Perspectives</td>
<td>Written or oral report in primary literature (or in-class work facilitated by the instructor)</td>
</tr>
<tr>
<td>An integrative knowledge from biology (introductory biology, cell biology, genetics, physiology, molecular biology); chemistry (general chemistry, organic chemistry); and math (algebra, calculus) to understand macromolecular structure and function in the broad contexts of science and human health</td>
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<td>Written or oral report in primary literature (or in-class work facilitated by the instructor)</td>
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### Knowledge Integration

Exams containing comprehensive, multidisciplinary convergent questions

### Multidisciplinary, primary research literature review exercises using critical reading assignments, including in-class discussion, presentations (oral or written) and a research paper reviewing an area of scientific literature

### Effective Communication

Oral (or written) presentations and in-class discussion work facilitated by the instructor

### Critical Thinking

Convergent exam questions

### Information Literacy

Written or oral report in primary literature (or in-class work facilitated by the instructor)

### Quantitative Perspectives

Convergent questions on exams and transferability of skills to new problems

### In-class structured discussion work facilitated by the instructor
IV. Course Activities
   A. Lecture
   B. Critical reading, analysis and discussion of primary research literature with written (or oral) reports
   C. Assigned problems to be worked outside of class
   D. Quizzes
   E. Exams
   F. Research and/or papers reviewing literature on a current theoretical or practical topic in biochemistry

V. Guidelines for Evaluation
   A. At least 3 written exams, one of which is a comprehensive final exam
   B. Quizzes may be given at the instructor's discretion
   C. Reports (written or oral) on primary literature
   D. Research paper
   E. Grading is A-F. Grades will be assigned based primarily on exam and quiz performance with no more than 30% of the grade based on reports and a research paper. The grading scale is defined in the syllabus or assigned after a normal curve.

VI. Course Level Justification: Builds upon a foundation of knowledge in Tier 1 GER, Tier 2 GER, and lower- and upper-division courses in the major; requires extensive prerequisite multidisciplinary knowledge from biology, chemistry (a total of 2 years), and mathematics; requires integrating of this knowledge to solve new types of problems and understand new concepts.

VII. Course Outline
   A. Important functional groups in biochemistry
   B. Thermodynamics as it applies to biochemistry
   C. Water and biochemistry
      1. Entropic drive of hydrophobic aggregation
      2. \( pK_a \) of relevant functional groups
      3. \( pH \)
      4. \( pI \)
   D. Amino acids
      1. Classification
      2. Non-standard amino acids
      3. Titration curves
   E. Peptides and proteins
      1. Primary structure
         a. methods in sequencing
         b. evolution perspectives
      2. Secondary structure
         a. predicting secondary structure from sequence
         b. disulfide bridges, intracellular and extracellular oxidation conditions
      3. Tertiary structure
         a. interactions involved in tertiary structure
         b. protein folding and dynamics
         c. methods used for tertiary structure determination
4. Quaternary structure
5. Protein techniques

F. Protein function
   1. Binding reactions
   2. Myoglobin and hemoglobin
   3. Allostery
   4. Structure-function relationship

G. Enzymes
   1. Catalytic mechanisms
   2. Michaelis-Menten kinetics
   3. Regulation of activity

H. Carbohydrates and carbohydrate-containing compounds
   1. Monosaccharides
   2. Disaccharides and polysaccharides
      a. O-glycosidic bond
      b. Primary, secondary, and tertiary structure
   3. Glycoproteins, proteoglycans, and glycolipids
   4. Structure-function relationship

I. Nucleotides and nucleic acids
   1. Primary, secondary, and tertiary structure
   2. Techniques, including sequencing
   3. "-omics"

J. Lipids
   1. Diversity in classification of lipids
   2. Various functions of lipids

K. Biological Membranes
   1. Composition and architecture of membranes
   2. Membrane dynamics

VIII. Suggested Texts


IX. Bibliography


Scientific Journals such as (not a complete list):
Biological Chemistry
Biochemistry
Biophysical Journal
Cell
European Journal of Molecular Biology
Journal of Biological Chemistry
Journal of Molecular Biology
Molecular Biology
Molecular Cell
Nature
Nature Structure
Proceedings of the National Academy of Sciences
Science
Curriculum Coordination Form

Notification Date: January 29, 2007

Initiating unit: CAS, Department of Chemistry

Affected unit(s): Chemistry Department, CAS; Chugiak/Eagle River Campus; Kenai Peninsula College; Kodiak College; Mat-Su College; Elmendorf Air Force Base; Fort Richardson Army Post

Course Prefix and Number: CHEM A441

Previous Prefix and Number: N/A

Complete Course/Program Title: Principles of Biochemistry I

Previous Course/Program Title: N/A

Description of Action: Seeking integrated GER capstone status. Clarifying course prerequisites.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Resource Implication Form

1. School/College CAS, Department of Chemistry

2. Program/Course Principles of Biochemistry I

3. Course Prefix CHEM

4. Course Number A441

5. Implementation Date Fall, 2007

6. Type of Action and Category
   - [ ] Course addition
   - [x] Course change
   - [ ] Program addition
   - [ ] Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - [ ] part-time faculty $ 
   - [ ] new full-time faculty $ 
   - [ ] reassignment of full-time faculty $ 
   - [ ] additional class/lab space $ 
   - [ ] modification of class/lab space $ 
   - [ ] additional library resources $ 
   - [ ] additional computer equipment $ 
   - [ ] other costs $ 

8. Explanation: Seeking integrative capstone status, no additional resources required

[ ] Approved

[ ] Disapproved

Department Chair __________________________ Date ____________

[ ] Approved

[ ] Disapproved

Dean/Director of School/College __________________________ Date ____________

[ ] Approved

[ ] Disapproved

Provost __________________________ Date ____________
### Curriculum Action Request

**University of Alaska Anchorage**

**Proposal to Initiate, Add, Change, or Delete a Course or Program of Study**

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<tr>
<td>CB CBPP</td>
<td>ADBP</td>
<td>Business Administration</td>
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<tr>
<th>2. Course Prefix</th>
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<th>5b. Contact Hours</th>
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<tbody>
<tr>
<td>BA</td>
<td>A151</td>
<td></td>
<td>3</td>
<td>(Lecture + Lab) (3+0)</td>
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<table>
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<tr>
<th>6. Complete Course/Program Title</th>
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<tbody>
<tr>
<td><em>Introduction to Business</em></td>
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**Abbreviated Title for Transcript (30 character)**

*Course Description*

Introduces students to the fundamentals of business. Explores strategies that allow companies to compete in today’s interactive, global marketplace. Covers each of the functional areas of business: management, marketing, finance, and accounting. Students gain some valuable critical-thinking, problem-solving, team-building, and communication skills required in modern business environments.

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<th>7. Type of Course</th>
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<td>☑ Academic</td>
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<th>10. Grading Basis</th>
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<tbody>
<tr>
<td>☑ A-F</td>
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<table>
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<td>From: Fall/2007 To: /9999</td>
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<table>
<thead>
<tr>
<th>13. List any programs or college requirements that require this course</th>
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</thead>
<tbody>
<tr>
<td>Certificate, Logistics; Associate of Applied Science, Accounting; Associate of Applied Science, General Business; Associate of Applied Science, Small Business Management; Associate of Applied Computer Science, Computer Systems Technology; Associate of Applied Science, Logistics Operations; Associate of Applied Science, Aviation Administration; Bachelor of Social Work; Bachelor of Science, Aviation Technology, Aviation Management Emphasis; Bachelor of Science, Physical Education, Health &amp; Fitness Leadership; Bachelor of Science, Physical Education, Adventure Leadership</td>
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</table>

<table>
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<tr>
<th>14. Coordinate with Affected Units:</th>
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<tr>
<td>CBPP, Listserv Department, School, or College</td>
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<table>
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<th>15. General Education Requirement</th>
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<tr>
<td>☑ Oral Communication</td>
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<td>☐ Fine Arts</td>
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<table>
<thead>
<tr>
<th>16. Course Description</th>
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<tbody>
<tr>
<td>Introduces students to the fundamentals of business. Explores strategies that allow companies to compete in today’s interactive, global marketplace. Covers each of the functional areas of business: management, marketing, finance, and accounting. Students gain some valuable critical-thinking, problem-solving, team-building, and communication skills required in modern business environments.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>17a. Course Prerequisite(s) (list prefix and number)</th>
<th>17b. Test Score(s)</th>
<th>17c. Co-requisite(s) (concurrent enrollment required)</th>
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<th>17d. Other Restriction(s)</th>
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<td>☐ College</td>
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<th>17e. Registration Restriction(s) (non-codable)</th>
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<table>
<thead>
<tr>
<th>18. Mark if course has fees standard CBPP lab fees</th>
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</table>

<table>
<thead>
<tr>
<th>19. Justification for Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revised to reflect the latest trends in business and in accordance with the CBPP Five-Year Review.</td>
</tr>
</tbody>
</table>

---

**Initiator (faculty only) Date**

**Approved**

**Disapproved**

**Dean/Director of School/College Date**

**Approved**

**Disapproved**

**Department Chairperson Date**

**Approved**

**Disapproved**

**Undergraduate or Graduate Academic Board Chairperson Date**

**Approved**

**Disapproved**

**Provost or Designee Date**

---

**School or College CB CBPP**

**Division ADBP**

**Department Business Administration**
I. Date Initiated

April 18, 2007

II. Course Information

College/School: College of Business and Public Policy
Department: Business Administration
Program: Certificate, Logistics; Associate of Applied Science, Accounting; Associate of Applied Science, General Business; Associate of Applied Science, Small Business Management; Associate of Applied Science, Computer Systems Technology; Associate of Applied Science, Logistics Operations; Associate of Applied Science, Aviation Administration; Bachelor of Social Work; Bachelor of Science, Aviation Technology, Aviation Management Emphasis; Bachelor of Science, Physical Education, Health & Fitness Leadership; Bachelor of Science, Physical Education, Adventure Leadership

Course Title: Introduction to Business
Course Number: BA A151
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: Introduces students to the fundamentals of business. Explores strategies that allow companies to compete in today’s interactive, global marketplace. Covers each of the functional areas of business: management, marketing, finance, and accounting. Students gain some valuable critical-thinking, problem-solving, team-building, and communication skills required in modern business environments.

Course Prerequisites: N/A
Registration Restrictions: N/A
Fees: Standard CBPP lab fee

III. Course Activities

A. Lectures and discussions
B. In-class exercises
C. Cases
D. Guest speakers

IV. Guidelines for Evaluation

A. Homework
B. Team exercises
C. Cases
D. Tests and quizzes
E. Final exam
V. Course Level Justification
This is a 100-level course that introduces students to the field of business and helps them build basic business skills and vocabulary. Introduction to Business is a survey course that serves as a foundation for subsequent business courses.

VI. Outline
A. The Global Business Environment
   1. Economic systems and competition
      a. Impact of allocation of scarce resources on business
      b. Supply and demand as “the science of choice”
   2. Ethics and social responsibility
      a. Moral rights and duties between the firm and its stakeholders
      b. Ethical issues concerning relations between different companies

B. Starting and Growing a Business
   1. Forms of business ownership
   2. Entrepreneurship

C. Management
   1. Managing and leading human resources
   2. Managing organizations
   3. Empowerment, teamwork, and communication
   4. Production and operations management
   5. Labor management issues

D. Marketing
   1. Customer-driven marketing
   2. Developing the marketing mix
   3. Marketing research

E. Managing Technology and Information
   1. Using technology to manage information
   2. Understanding accounting and financial statements

F. Managing Financial Resources
   1. Money and financial institutions
   2. Financial management and securities markets

VII. Suggested Text
VIII. Bibliography


IX. Instructional Goals and Student Outcomes
A. Instructional Goals. The instructor will:

1. Introduce students to the field of business and distinguish between for-profit and not-for-profit organizations
2. Introduce key topics relating to the complexity of relationships between institutions and human behavior: human resource management, leadership, teamwork, and motivation
3. Explain the concepts of business ethics, social responsibility, and the terms under which ethical rights and duties exist between companies and society
4. Distinguish between microeconomics and macroeconomics and explain the factors that drive demand and supply
5. Explain the importance of international business and the main reasons that nations trade
6. Summarize the three basic forms of business ownership and their advantages and disadvantages
7. Define the term entrepreneur and explain why people choose entrepreneurship
8. Describe management skills, leadership, and strategic planning
9. Explain the importance of human resource management and the functions of human resource managers and unions
10. Describe teamwork and the value of teams to empowering employees
11. Discuss the importance of production and operations management
12. Explain the marketing concept and the basic steps in developing a marketing strategy
13. Explain the concept of the marketing mix: product, pricing, distribution, and promotional strategies
14. Identify marketing research techniques, primary and secondary, used to study consumer behavior and to identify market segments
15. Identify the functions of accounting and its importance to the firm’s stakeholders and explain the functions of the three principle financial statements: income statement, balance sheet, and statement of cash flows
16. Discuss how business manage technology and information
17. Explain the responsibilities of a financial manager and describe some sources and uses of short-term and long-terms funds
18. Describe the differences between the primary and secondary securities markets and discuss several types of securities

B. Student Outcomes. The students will be able to:

<table>
<thead>
<tr>
<th>Task</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describe the non-empirical truth claims in business ethics and why social responsibility and ethical performance are critical to business success and to society</td>
<td>Quizzes Tests</td>
</tr>
<tr>
<td>2. Distinguish between microeconomics and macroeconomics and study the theoretical models of supply and demand</td>
<td>Quizzes Tests Team exercises</td>
</tr>
<tr>
<td>3. Demonstrate knowledge of the global marketplace and explain the complexities of human institutions and behavior that impact the global business environment and business relationships</td>
<td>Homework Tests Team exercises or cases</td>
</tr>
<tr>
<td>4. Describe how businesses can be organized and explain entrepreneurial alternatives</td>
<td>Quizzes Tests Homework</td>
</tr>
<tr>
<td>5. Reflect on the role of business practices on the workings of individuals and society, and explain that business requires strong understanding of interpersonal, group, and cultural dynamics and how this knowledge applies to contemporary life</td>
<td>Quizzes Tests Cases</td>
</tr>
<tr>
<td>6. Demonstrate understanding of management and leadership techniques</td>
<td>Team exercises Tests</td>
</tr>
<tr>
<td>7. Define marketing and the elements of the marketing mix and its application to contemporary society</td>
<td>Tests Cases Homework</td>
</tr>
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</table>
| 8. | Describe the empirical principles and theoretical models of consumer behavior used to define target markets | Quizzes  
Tests  
Exercises |
| 9. | Apply breakeven analysis and cost-based pricing models to set prices | Quizzes  
Tests  
Exercises or cases |
| 10. | Explain the role of management information systems and the benefits and challenges of e-commerce | Tests  
Final exam  
Exercises or cases |
| 11. | Explain the functions of accounting and finance and their value to the firm’s stakeholders | Tests  
Final exam  
Exercises or cases |
| 12. | Demonstrate a knowledge of business-specific approaches and applications and the ability to integrate business concepts using critical thinking skills | Tests  
Final exam  
Exercises or cases |
| 13. | Explain the limits of human objectivity in analysis of business and economic issues and how ideas are tested and verified or rejected | Final exam |
| 14. | Demonstrate an introductory knowledge of social science thinking applied to business which includes observation, empirical data analysis, theoretical models, qualitative analysis, qualitative reasoning, and application to social aspects of contemporary life | Exercises or cases |
BA A151 Meets Criteria of the Social Sciences Descriptor

The following is the newly defined social science descriptor broken down into its components. In each case, BA A151 meets components of requirement.

The social sciences focus on the acquisition, analysis, and interpretation of empirical data relevant to the human experience. Disciplines differ in their focus on collective as opposed to individual behavior, biological as opposed to social or cultural factors, the present as opposed to the past, and quantitative as opposed to qualitative data.

Students who complete a general education social sciences course:

1. **Should be motivated to reflect on the workings of the society of which they are a part and should possess a broad perspective on the diversity of human behavior.**

A significant part of the course focuses on investigating the complexity of human institutions and behavior. Today’s successful businesses require a strong understanding of interpersonal, group, and cultural dynamics. Some topics included in human resource management focus specifically on interpersonal relationships in leadership, teamwork, motivation, and communication. In-class exercises complement readings and written assignments. Another component of the course includes options for organizing a business and structuring the internal organization.

2. **Should be able to distinguish between empirical and non-empirical truth claims.**

Sociology and economics are empirical disciplines that are widely applied in business. Students taking Introduction to Business study the basic economic theories. In addition, while students at the 100-level don’t conduct marketing research, they study marketing research technique that employs principles commonly used in other scientific research disciplines, in which a postulate or theory is hypothesized and then either proven or disproven based on observation of causes and effects in a controlled environment. For example, we may discuss a blind taste test to measure consumer preferences for various soft drink formulas as a scientific approach. A non-scientific approach to the same problem would be a shopping mall questionnaire that asked consumers to rate their preferences for various brand name soft drinks. In this example, the consumer's expressed preference can be caused by a number of factors unrelated to the contents of the beverage. In the taste-test environment, the contents of the beverage are the only relevant variable affecting the consumer's choice.

Non-empirical truth claims are discussed when students study ethics: business, economic, and environmental. Topics in relating to business ethics include:

- the aims of which are to determine the fundamental purposes of a company. If a company's main purpose is to maximize the returns to its shareholders, then it could be seen as unethical for a company to consider the interests and rights of anyone else.
- corporate social responsibility an umbrella term under which the ethical rights and duties existing between companies and society is debated.
- regarding the moral rights and duties between a company and its shareholders: fiduciary responsibility, stakeholder concept v. shareholder concept
- ethical issues concerning relations between different companies: e.g. hostile take-overs and industrial espionage
- leadership issues: corporate governance
3. **Should be aware of the limits of human objectivity and understand the rudiments of how ideas about social phenomena may be tested and verified or rejected.**

Sociologists and other social scientists study diverse things: from census data on hundreds of thousands of human beings, through the in-depth analysis of the life of a single important person to monitoring what is happening on a street today - or what was happening a few hundred years ago. Students taking Introduction to Business study marketing and the results of research needed to determine target markets. Students are presented with primary and secondary research methods that are needed to describe segmentation bases for consumer and business markets. Discussions also consider whether research yields results which determine whether developing a market segment is merited.

4. **Should have an introductory knowledge of social science thinking which includes:**
   - observation
   - empirical data analysis
   - theoretical models
   - quantitative reasoning
   - application to social aspects of contemporary life

Case studies conducted in class and/or as homework assignments require students use each of the skills listed in descriptor #4.

5. **A student who has met the social science general education requirement is expected to be able to demonstrate knowledge of social science approaches and to apply that knowledge in a particular content area.**

Social science approaches include observation, empirical data analysis, theoretical models, quantitative reasoning, and application to social aspects of contemporary life. Since Introduction to business is a survey course, students experience social science approaches in numerous ways. Here are a few:

In the marketing component of the course, students talk about market surveys and theoretical models such as the consumer behavior process relating to determining buying behavior.

When students study economics, “the science of choice,” they generalize about human behavior regarding the disparity between limited resources and unlimited, human material wants. They apply economic theory to developing supply and demand curves, and predict economic changes when businesses contradict variance from equilibrium prices.

Pricing strategies necessitate application of breakeven analysis and cost-based pricing. Students use quantitative reasoning skills as well as psychological pricing theories to determine pricing strategies.
**Curriculum Action Request**  
**University of Alaska Anchorage**  
**Proposal to Initiate, Add, Change, or Delete a Course or Program of Study**

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS CAS</td>
<td>AMSC Division of Math Science</td>
<td>Physics and Astronomy</td>
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<table>
<thead>
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<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
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<td>A103</td>
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<td>(Lecture + Lab) (3+0)</td>
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<td>Introductory Astronomy I</td>
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<tr>
<th>10. Grading Basis</th>
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<tbody>
<tr>
<td>Emailed faculty list-serve and all documents available at <a href="http://salt.uaa.alaska.edu/curriculum/">http://salt.uaa.alaska.edu/curriculum/</a></td>
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<td>Written Communication</td>
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<td>Quantitative Skills</td>
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<td>Fine Arts</td>
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<td>Social Sciences</td>
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<td>Natural Sciences</td>
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<td>Integrative Capstone</td>
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<th>16. Course Description</th>
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<tbody>
<tr>
<td>Introduction to solar system astronomy; emphasis on most recent results from space research. History of astronomy, instruments, planetary motion, physical properties of planets, satellites, comets, and solar system evolution.</td>
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<td>High school algebra and trigonometry or equivalent</td>
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<th>18. Mark if course has fees</th>
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<tr>
<th>19. Justification for Action</th>
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<tbody>
<tr>
<td>To align the format of the Introductory Astronomy classes with most other natural science classes at UAA; students will be able to take the lecture component with or without the laboratory.</td>
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<th>Initiator (faculty only) Date</th>
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| Disapproved                  |

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<th>Dean/Director of School/College Date</th>
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<tr>
<th>Department Chairperson Date</th>
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<tbody>
<tr>
<td>Approved</td>
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<td>Disapproved</td>
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<p>| Undergraduate or Graduate    |</p>
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<th>Academic Board Chairperson Date</th>
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<th>Provost or Designee Date</th>
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<tbody>
<tr>
<td>Approved</td>
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</tbody>
</table>
I. Date of Initiation
   February 27, 2007

II. Course Information
   A. College: CAS
   B. Department: Physics & Astronomy
   C. Course Subject: ASTR
   D. Course Number: A103
   E. Number of Credits/CEU: 3.0
   F. Number of Contact Hours: 3+0
   G. Course Title: Introductory Astronomy I
   H. Grading Basis: A-F
   I. Course Description: Introduction to solar system astronomy; emphasis on most recent results from space research. History of astronomy, instruments, planetary motion, physical properties of planets, satellites, comets, and solar system evolution.
   J. Course Prerequisite: N.A.
   K. Registration Restrictions: High school algebra and trigonometry or equivalent
   L. Fees: No
   M. Implementation Date: Fall 2007

III. Course Activities
   This course will typically be structured to use a combination of lecture, peer-based instruction, and research-based activities, plus observational exercises if possible.

IV. Evaluation
   The grading scale is A-F. The student will be evaluated on a weekly basis through quizzes, homework assignments, one or two midterms, and a final exam.

V. Course Level Justification
   This course is a lower division course usually taken by freshmen and sophomores.

VI. Outline
   1. Early History of Astronomy, from the Greek to Copernicus and Brahe
   2. Origin of Modern Astronomy, from Kepler and Galileo to Newton
   3. Light and Atoms
   4. Telescopes
   5. Sky and Calendar
   6. Structure and Origin of the Solar System
   7. Our Earth
8. Our Moon
9. The Terrestrial Planets: Mercury, Venus, Mars
10. The Jovian Planets: Jupiter, Saturn, Uranus, Neptune
11. Rings and Moons
12. Pluto and the Kuiper Belt
14. Comets and the Oort Cloud
15. Meteorites and Asteroids

VII. Instructional Goals and Student Outcomes
A. Instructional Goals.
1. To provide the student with an in-depth understanding of the fundamental concepts of classical astronomy, with emphasis on techniques and problems in solar system astronomy.
2. To provide the student with information on historical astronomy, gravitation, light, optical instruments, the theories of the origin and development of the Solar System, and an in-depth survey of each major planet in the solar system with a strong emphasis on recent space astronomy results.
3. To apply these concepts and perspectives to an analysis of case studies from modern astronomy research.

B. Student Outcomes. The student will demonstrate the ability to:

Student Outcomes
Define and explain the basic terms and concepts used in analysis of problems in solar system astronomy.

Assessment Procedures
Objective exams, homework, in-class tutorials, and optional student presentations.

Demonstrate an ability to use the procedures and techniques of basic solar system astronomy in solving typical problems in the field.

Objective exams, homework, in-class tutorials, and optional student presentations.

Identify ways in which astronomy has advanced the understanding of important natural processes.

Objective exams, homework, in-class tutorials, and optional student presentations.

VIII. Suggested Texts (at option of instructor)

IX. Bibliography and Resources
Curriculum Coordination Form

Notification Date: February 9, 2007

Initiating unit: Physics and Astronomy

Affected unit(s):

Course Prefix and Number: ASTR A103   Previous Prefix and Number: ASTR A103

Complete Course/Program Title: Introductory Astronomy I

Previous Course/Program Title: Introductory Astronomy I

Description of Action: Change the number of credits from 4 to 3 and the contact hours from (3+3) to (3+0). Simultaneously, a separate CCF and CAR is handed in to reflect the addition of ASTR A103L which picks up the 1 credit and the 3 lab credit hours.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Library Resource Form

Excerpts from the Northwest Association of Schools and Colleges Accreditation Handbook 1999 Edition

Standard Five - Library And Information Resources
Standard 5.A - Purpose and Scope
The primary purpose for library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution's mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

Standard Two - Educational Program And Its Effectiveness
Standard 2.A. - General Requirements
2.A.8 Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.

Program/Course Title: ASTR A103 Introductory Astronomy I

1. Please identify the library liaison consulted in preparation of this proposal.
   Name: Daria Carle

To see who your library liaison is at:
UAA go to: http://www.lib.uaa.alaska.edu/webgroup/liaison.php3
Kenai Peninsula College go to: http://www.uaa.alaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
Kodiak College go to: http://www.koc.alaska.edu/library/default.html
Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.
   1. N.A.
   2.
   3.

Initiator signature
MEMO TO: Accounting & Enrollment Services  subj: LAB FEE REQUEST

DEPARTMENT FROM: Physics and Astronomy

Course & Title: ASTR A103 Introductory Astronomy I

Year: 2007  Section: Spring 001- Summer 301- Fall all sections

Lab Fee Account Number: 11055  104110

<table>
<thead>
<tr>
<th>Current Lab Fee</th>
<th>Requested Action</th>
<th>Total Lab Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 45</td>
<td>Initiate - Increase - Delete</td>
<td>$ 0</td>
</tr>
<tr>
<td>$ 45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Justification: There has always been a lab fee attached to ASTR A103 to provide for the associated lab ASTR A103L. Since the lab is being created as a separate class, the fee is being dropped from ASTR A103 and initiated for the new ASTR A103L.

Justification Worksheet: Materials/Supplies Used (list each item separately)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>2</td>
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<td>9</td>
<td></td>
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<tr>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

\[
\text{Total Cost} \div \text{Anticipated Enrollment} = \text{Cost Per Student}
\]

Department Chair's Signature Date

Recommended Disapproved

Associate Dean, CAS Date

Recommended Disapproved

Dean, CAS Date

Approved Disapproved

Provost Date

cc: Accounting Services
    CAS Budget Office
    Enrollment Services
    Department Administrative Assistant/Secretary

revised 04/03/00
Resource Implication Form

1. School/College CAS

2. Program/Course Physics and Astronomy

3. Course Prefix ASTR

4. Course Number A103

5. Implementation Date Fall 2007

6. Type of Action and Category
   - [ ] Course addition
   - [X] Course change
   - [ ] Program addition
   - [ ] Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - [ ] part-time faculty $ 
   - [ ] new full-time faculty $ 
   - [X] reassignment of full-time faculty $ 
   - [ ] additional class/lab space $ 
   - [ ] modification of class/lab space $ 
   - [ ] additional library resources $ 
   - [ ] additional computer equipment $ 
   - [ ] other costs $ 

8. Explanation: No additional costs will be incurred. This action separates a lab component from a lecture; both lecture and lab currently exist as a 3+3 contact hour, 4 credit course.

Approved

Disapproved

Department Chair                   Date

Approved

Disapproved

Dean/Director of School/College              Date

Approved

Disapproved

Provost                      Date
Curriculum Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

1a. School or College
AS CAS

1b. Division
AMSC Division of Math Science

1c. Department
Physics and Astronomy

2. Course Prefix
ASTR

3. Course Number
A103L

4. Previous Course Prefix & Number

5a. Credits/CEU
1

5b. Contact Hours
(Lecture + Lab)
(0+3)

6. Complete Course/Program Title
Introductory Astronomy I Lab

Abbreviated Title for Transcript (30 character)

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

8. Type of Action
☒ Course
☐ Program

☒ Add
☐ Change
☐ Delete

(Indicate appropriate boxes)

9. Repeat Status No
# of Repeats
Max Credits

10. Grading Basis
☒ A-F
☐ P/NP
☐ NG

11. Implementation Date
From: Fall/2007
To: 9999

12. ☐ Cross Listed with

☑ Stacked with

Cross-Listed Coordination Signature

13. List any programs or college requirements that require this course

14. Coordinate with Affected Units:
Emailed faculty list-serve and all documents available at http://salt.uaa.alaska.edu/curriculum/
Department, School, or College

Initiator Signature
Date

15. ☒ General Education Requirement
☐ Oral Communication
☐ Written Communication
☐ Quantitative Skills
☐ Humanities
☐ Fine Arts
☐ Social Sciences
☐ Natural Sciences
☐ Integrative Capstone

16. Course Description
Introductory astronomy laboratory with experiments in basic observational methods and data analysis applicable to the study of the solar system.

17a. Course Prerequisite(s) (list prefix and number)
ASTR A103 or concurrent enrollment

17b. Test Score(s)
NA

17c. Co-requisite(s) (concurrent enrollment required)
NA

17d. Other Restriction(s)
☒ College
☐ Major
☐ Class
☐ Level

17e. Registration Restriction(s) (non-codable)
High school algebra and trigonometry or equivalent

18. ☒ Mark if course has fees

19. Justification for Action
To align the format of the Introductory Astronomy classes with most other natural science classes at UAA; students will be able to take the lecture component with or without the lab.

Initiator (faculty only)
Date

Approved
disapproved:

Dean/Director of School/College
Date

Approved
disapproved:
Department Chairperson
Date

Approved
disapproved:
Undergraduate or Graduate
Academic Board Chairperson
Date

Approved
disapproved:
Curriculum Committee Chairperson
Date

Approved
disapproved:
Provost or Designee
Date

28
I. Date of Initiation

February 27, 2007

II. Course Information

A. College: CAS
B. Department: Physics & Astronomy
C. Course Subject: ASTR
D. Course Number: A103L
E. Number of Credits/CEU: 1.0
F. Number of Contact Hours: 0+3
G. Course Title: Introductory Astronomy I Lab
H. Grading Basis: A-F
I. Course Description:
Introductory astronomy laboratory with experiments in basic observational methods and data analysis applicable to the study of the solar system.

J. Course Prerequisite:
ASTR A103 or concurrent enrollment

K. Registration Restrictions:
High school algebra and trigonometry or equivalent.

L. Fees
Yes

III. Course Activities

Standard laboratory class. Students will carry out assigned experimental procedures in a combination laboratory and outdoors (weather permitting) environment using lab equipment, research data, and/or computer simulations.

IV. Evaluation

The grading scale is A-F. The student will be evaluated on a weekly basis through their preparatory work for labs, their participation and level of completion of the labs and a lab final.

V. Course Level Justification

This course is a lower division course usually taken by freshmen and sophomores.

VI. Outline

Specific labs depend on each campus’ availability of lab equipment.

Observational Labs:
1. Using a starfinder
2. Identifying constellations
3. Locating celestial objects with a coordinate grid
4. Determining the Earth’s rotational rate using the Foucault pendulum
5. Phases of Earth’s moon
6. Mapping the Moon
7. Observing Jupiter’s large moons and Kepler's Third Law
Classroom Labs:
1. Orbital elements
2. Optics
3. Understanding the function of and using telescopes
4. Atomic spectra
5. Measuring the emission lines of Hydrogen and Helium
6. Using the Doppler shift to find extrasolar planets
7. Radar measurements to Mercury
8. Determining the orbit of Mercury
9. Lunar Features and Mountain Heights
10. Plotting planet orbits and determining retrograde motion
11. Orbit determination from observations
12. Parallax
13. Determining the distance to planets from their retrograde motion

VII. Instructional Goals and Student Outcomes
A. Instructional Goals
1. To provide the student with weekly laboratory work to reinforce and give hands-on experience with most of the primary topics covered in the lecture.
2. To provide the student with the opportunity to handle optical instruments, primarily telescopes.
3. To provide the student with techniques and equipment useful in the study of astronomical phenomena.

B. Student Outcomes. The student will demonstrate the ability to:

Student Outcomes
Work with the tools used in making basic astronomical observations.

Make basic observations of astronomical phenomena, create reliable observation records, and analyze data collected in experiments.

Identify ways in which their own astronomical observations or calculations have advanced their understanding of important natural processes.

Assessment Procedures
Written lab reports, exams, optional student presentations, observation of performance in lab.

Written lab reports, exams, optional student presentations, observation of performance in lab.

Written lab reports, exams, optional student presentations, observation of performance in lab.

VIII. Suggested Texts (at option of instructor)

IX. Bibliography and Resources
Library Resource Form

Excerpts from the Northwest Association of Schools and Colleges Accreditation Handbook 1999 Edition

Standard Five - Library And Information Resources
Standard 5.A - Purpose and Scope
The primary purpose for library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution's mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

Standard Two - Educational Program And Its Effectiveness
Standard 2.A - General Requirements
2.A.8 Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.

Program/Course Title: ASTR A103L Introductory Astronomy I Lab

1. Please identify the library liaison consulted in preparation of this proposal.

   Name: Daria Carle

   To see who your library liaison is at:
   UAA go to: http://www.lib.uaa.alaska.edu/webgroup/liaison.php3
   Kenai Peninsula College go to: http://www.uaa.alaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
   Kodiak College go to: http://www.kok.alaska.edu/library/default.html
   Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.

   1. N.A.
   2.
   3.

Initiator signature
MEMO TO: Accounting & Enrollment Services     subj: LAB FEE REQUEST

DEPARTMENT FROM: Physics and Astronomy

Course & Title: ASTR A103L Introductory Astronomy I Lab

Year: 2007    Section: Spring 001- Summer 301- Fall all sections

Lab Fee Account Number: 11055 104110

Current Lab Fee | Requested Action | Total Lab Fee
----------------|----------------|----------------
$ ___________  | Initiate - Increase - Decrease - Delete (Please Circle One) | $ ______ 50
$ ______ 50

Justification: There has always been a lab fee attached to ASTR A103 to provide for the associated lab ASTR A103L. Since the lab is being created as a separate class, the fee is being dropped from ASTR A103 and initiated for the new ASTR A103L laboratory. There is continuous need for funds to replace damaged equipment, purchase new apparatus, keep software license fees paid up to date, maintain electronics (printers, scanners, etc.). In the table are some sample annual costs. All labs share use of common equipment between physics and astronomy experiments. Average annual costs total over $25,000.

Justification Worksheet: Materials/Supplies Used (list each item separately)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 replacement computer interfaces (two annually)</td>
<td>$1,600</td>
</tr>
<tr>
<td>2 replacement electronic tubes (two annually)</td>
<td>$1,800</td>
</tr>
<tr>
<td>3. software license annual renewal fees</td>
<td>$1,600</td>
</tr>
<tr>
<td>4. replacement of out-dated or damaged equipment</td>
<td>$12,000</td>
</tr>
<tr>
<td>5. new experiments (varies year to year)</td>
<td>$5000-$10,000</td>
</tr>
<tr>
<td>6. consumables (thermometers, clamps, etc.)</td>
<td>$1,000</td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
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<tr>
<td>9.</td>
<td></td>
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<tr>
<td>10.</td>
<td></td>
</tr>
</tbody>
</table>

Total Cost avg $25,500 / 480/year = $53 Cost Per Student

Department Chair's Signature Date

______ Recommended ______ Disapproved

Associate Dean, CAS Date

______ Recommended ______ Disapproved

Dean, CAS Date

______ Approved ______ Disapproved

Provost Date

cc: Accounting Services
CAS Budget Office
Enrollment Services
Department Administrative Assistant/Secretary

revised 04/03/00
Resource Implication Form

1. School/College CAS

2. Program/Course Physics and Astronomy

3. Course Prefix ASTR

4. Course Number A103L

5. Implementation Date Fall 2007

6. Type of Action and Category
   - [x] Course addition
   - [ ] Course change
   - [ ] Program addition
   - [ ] Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - [ ] part-time faculty
   - [ ] new full-time faculty
   - [x] reassignment of full-time faculty
   - [ ] additional class/lab space
   - [ ] modification of class/lab space
   - [ ] additional library resources
   - [ ] additional computer equipment
   - [ ] other costs

   Explanation: No additional costs will be incurred. This action separates a lab component from a lecture; both lecture and lab currently exist as a 3+3 contact hour, 4 credit course.

8. Explanation:

   ______ Approved
   ______ Disapproved

   Department Chair  Date

   ______ Approved
   ______ Disapproved

   Dean/Director of School/College  Date

   ______ Approved
   ______ Disapproved

   Provost  Date
Curriculum Coordination Form

Notification Date: February 9, 2007

Initiating unit: Physics and Astronomy

Affected unit(s):

Course Prefix and Number: ASTR A103L   Previous Prefix and Number: 

Complete Course/Program Title: Introductory Astronomy I Lab

Previous Course/Program Title:

Description of Action: ASTR A103L is a new lab course (0+3) for 1 credit which accompanies Introductory Astronomy I (ASTR A103). ASTR A103 is being changed to (3+0) for 3 credits.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Curriculum Action Request  
University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS CAS</td>
<td>AMSC Division of Math Science</td>
<td>Physics and Astronomy</td>
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</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEU</th>
<th>5b. Contact Hours</th>
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<tbody>
<tr>
<td>ASTR</td>
<td>A104</td>
<td></td>
<td>3</td>
<td>(Lecture + Lab) (3+0)</td>
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<tr>
<th>6. Complete Course/Program Title</th>
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<tbody>
<tr>
<td>Introductory Astronomy II</td>
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<table>
<thead>
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<th>7. Type of Course</th>
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<th>☐ CEU</th>
<th>☐ Professional Development</th>
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<th>8. Type of Action</th>
<th>☑ Course</th>
<th>☐ Program</th>
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<tr>
<td>☑ Add</td>
<td>☑ Prefix</td>
<td>☑ Credits</td>
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<td>☑ Title</td>
<td>☑ Grading Basis</td>
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<td>☑ Change</td>
<td>☑ Course Description</td>
<td>☑ Test Score Prerequisites</td>
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<td>☑ Change</td>
<td>☑ Other Restrictions</td>
<td>☑ Class</td>
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<td>☑ Change</td>
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<td>☑ College</td>
</tr>
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<td>☑ Change</td>
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<th>☑ P/NP</th>
<th>☐ NG</th>
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<th>To: /999</th>
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<th>12. ☑ Cross Listed with</th>
<th>☑ Stacked</th>
<th>with</th>
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<th>13. List any programs or college requirements that require this course</th>
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</thead>
</table>

<table>
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<tr>
<th>14. Coordinate with Affected Units:</th>
<th>Emailed faculty list-serve and all documents available at <a href="http://salt.uaa.alaska.edu/curriculum/">http://salt.uaa.alaska.edu/curriculum/</a></th>
</tr>
</thead>
</table>

<table>
<thead>
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<th>15. ☑ General Education Requirement</th>
<th>☑ Oral Communication</th>
<th>☐ Written Communication</th>
<th>☐ Quantitative Skills</th>
<th>☑ Humanities</th>
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<tbody>
<tr>
<td>☐ Fine Arts</td>
<td>☐ Social Sciences</td>
<td>☑ Natural Sciences</td>
<td>☐ Integrative Capstone</td>
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</table>

<table>
<thead>
<tr>
<th>16. Course Description</th>
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<tbody>
<tr>
<td>Introduction to solar, stellar, galactic, extragalactic astronomy. Stars, clusters, galaxies, stellar evolution, the universe as a whole, and cosmology. Special note: May be taken out of sequence, but not recommended.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17a. Course Prerequisite(s) (list prefix and number)</th>
<th>17b. Test Score(s)</th>
<th>17c. Co-requisite(s) (concurrent enrollment required)</th>
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</thead>
<tbody>
<tr>
<td>ASTR A103</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17d. Other Restriction(s)</th>
<th>17e. Registration Restriction(s) (non-codable)</th>
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<tbody>
<tr>
<td>☑ College</td>
<td>☑ Major</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>18. ☑ Mark if course has fees</th>
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</table>

<table>
<thead>
<tr>
<th>19. Justification for Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>To align the format of the Introductory Astronomy classes with most other natural science classes at UAA; students will be able to take just the lecture without the laboratory.</td>
</tr>
</tbody>
</table>

---

Initiator (faculty only) Date

Approved Disapproved

Dean/Director of School/College Date

Approved Disapproved

Department Chairperson Date

Approved Disapproved

Undergraduate or Graduate Academic Board Chairperson Date

Approved Disapproved

Provost or Designee Date

35
University of Alaska Anchorage  
Course Content Guide  
ASTR 104 Introductory Astronomy II

I. Date of Initiation  
February 27, 2007

II. Course Information
A. College: CAS  
B. Department: Physics & Astronomy  
C. Course Subject: ASTR  
D. Course Number: A104  
E. Number of Credits/CEU: 3.0  
F. Number of Contact Hours: 3+0  
G. Course Title: Introductory Astronomy II  
H. Grading Basis: A-F  
I. Course Description: Introduction to solar, stellar, galactic, extragalactic astronomy. Stars, clusters, galaxies, stellar evolution, the universe as a whole, and cosmology. Special note: May be taken out of sequence, but not recommended.
J. Course Prerequisite: ASTR A103
K. Fees: No  
L. Implementation Date: Fall 2007

III. Course Activities
This course will typically be structured to use a combination of lecture, peer-based instruction, and research-based activities, plus observational exercises if possible.

IV. Evaluation
The grading scale is A-F. The student will be evaluated on a weekly basis through quizzes, homework assignments, one or two midterms and a final exam.

V. Course Level Justification
This course is a lower division course usually taken by freshmen and sophomores.

VI. Outline
1. Light and Atoms  
2. Telescopes  
3. Our Star, the Sun  
4. Stars and their Spectra  
5. Stellar Distances and Motions  
6. Doubles, Variables and Clusters  
7. The Interstellar Medium  
8. Birth, Youth and Middle Age of Stars  
9. Aging and Death of Solar-like Stars  
10. Aging and Death of Heavy Stars: Supernovae  
11. Pulsars and Neutrons Stars  
12. Black Holes
13. Our Galaxy, the Milky Way  
14. Galaxies  
15. Quasars  
16. Cosmology

VII. Instructional Goals and Student Outcomes
A. Instructional Goals.
1. To provide the student with an in-depth understanding of the fundamental concepts of classical astronomy, with emphasis on techniques and problems in stellar astronomy, galactic and extragalactic astronomy, and cosmology.
2. To provide the student with information on historical aspects of the major areas of stellar astronomy, and a survey of the major ideas encountered in cosmology, with a strong emphasis on recent results from space research.
3. To apply these concepts and perspectives to an analysis of case studies from modern astronomy research.

B. Student Outcomes. The student will demonstrate the ability to:

Student Outcomes
Define and explain the basic terms and concepts used in stellar, galactic, extragalactic astronomy, and cosmology.
Use the procedures and techniques of basic stellar/galactic/extragalactic astronomy and cosmology in solving typical problems in the field.
Identify ways in which this area of astronomy has advanced the understanding of important natural processes.

Assessment Procedures
Objective exams, homework, in-class tutorials, and optional student presentations.
Objective exams, homework, in-class tutorials, and optional student presentations.
Objective exams, homework, in-class tutorials, and optional student presentations.

VIII. Suggested Texts (at option of instructor)

IX. Bibliography and Resources
Resource Implication Form

1. School/College CAS

2. Program/Course Physics and Astronomy

3. Course Prefix ASTR

4. Course Number A104

5. Implementation Date Fall 2007

6. Type of Action and Category
   - Course addition
   - Course change
   - Program addition
   - Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - part-time faculty $  
   - new full-time faculty $  
   - reassignment of full-time faculty $  
   - additional class/lab space $  
   - additional library resources $  
   - additional computer equipment $  
   - other costs $  

8. Explanation: No additional costs will be incurred. This action separates a lab component from a lecture; both lecture and lab currently exist as a 3+3 contact hour, 4 credit course.

______ Approved

______ Disapproved

Department Chair

_____ Approved

_____ Disapproved

Dean/Director of School/College

_____ Approved

_____ Disapproved

Provost

______ Approved

______ Disapproved

Date

Date

Date

Date

38
Program/Course Title: ASTR A104 Introductory Astronomy II

1. Please identify the library liaison consulted in preparation of this proposal.

   Name: Daria Carle

To see who your library liaison is at:
UAA go to: http://www.lib.uaa.alaska.edu/webgroup/liaison.php3
Kenai Peninsula College go to: http://www.uaa.alaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
Kodiak College go to: http://www.koc.alaska.edu/library/default.html
Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.

   1. N.A.
   2.
   3.

Initiator signature
MEMO TO: Accounting & Enrollment Services  subj: LAB FEE REQUEST

DEPARTMENT FROM: Physics and Astronomy

Course & Title: ASTR A104 Introductory Astronomy II

Year: 2007  Section: Spring 001-  Summer 301-  Fall all sections

Lab Fee Account Number: 11055  104110

<table>
<thead>
<tr>
<th>Current Lab Fee</th>
<th>Requested Action</th>
<th>Total Lab Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>$45</td>
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<td>$0</td>
</tr>
<tr>
<td>$45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Justification: There has always been a lab fee attached to ASTR A104 to provide for the associated lab ASTR A104L. Since the lab is being created as a separate class, the fee is being dropped from ASTR A104 and initiated for the new ASTR A104L.

Justification Worksheet: Materials/Supplies Used (list each item separately)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
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<td>8</td>
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<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Total Cost /  =  Cost Per Student

Department Chair's Signature  Date

______ Recommended  ______ Disapproved
Associate Dean, CAS  Date

______ Recommended  ______ Disapproved
Dean, CAS  Date

______ Approved  ______ Disapproved
Provost  Date

cc: Accounting Services
CAS Budget Office
Enrollment Services
Department Administrative Assistant/Secretary
revised 04/03/00
Notification Date: February 9, 2007

Initiating unit: Physics and Astronomy

Affected unit(s):

Course Prefix and Number: ASTR A104   Previous Prefix and Number: ASTR A104

Complete Course/Program Title: Introductory Astronomy II

Previous Course/Program Title: Introductory Astronomy II

Description of Action: Change the number of credits from 4 to 3 and the contact hours from (3+3) to (3+0). Simultaneously, a separate CCF and CAR is handed in to reflect the addition of ASTR A104L which picks up the 1 credit and the 3 lab credit hours.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Approved

Disapproved: Initiator (faculty only) Date

Dean/Director of School/College Date

Approved

Disapproved: Department Chairperson Date

Undergraduate or Graduate Date

Approved

Disapproved: Academic Board Chairperson Date

Provost or Designee Date

1a. School or College

AS CAS

1b. Division

AMSC Division of Math Science

1c. Department

Physics and Astronomy

2. Course Prefix

ASTR

3. Course Number

A104L

4. Previous Course Prefix & Number

5. Credits/CEU

1

5b. Contact Hours (Lecture + Lab)

(0+3)

6. Complete Course/Program Title

Introductory Astronomy II Lab

7. Type of Course

☑ Academic ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action

☐ Add ☐ Change (mark appropriate boxes) ☐ Delete

☐ Prefix ☐ Credits ☐ Title ☐ Grading Basis

☐ Course Description ☐ Test Score Prerequisites ☐ Other Restrictions

☐ Class ☐ Level ☐ College ☐ Major

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis

☐ A-F ☐ P/NP ☐ NG

11. Implementation Date

From: Fall/2007 To: /9999

12. ☐ Cross Listed with

☐ Stacked with

Cross-Listed Coordination Signature

13. List any programs or college requirements that require this course

14. Coordinate with Affected Units:

Emailed faculty list-serve and all documents available at http://salt.uaa.alaska.edu/curriculum/

15. ☑ General Education Requirement

☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities

☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

16. Course Description

Introductory astronomy laboratory with experiments in basic observational methods and data analysis applicable to the study of the Sun, stellar, galactic, and extragalactic astronomy. Special note: May be taken out of sequence, but not recommended.

17a. Course Prerequisite(s) (list prefix and number)

ASTR A104 or concurrent enrollment

17b. Test Score(s)

NA

17c. Co-requisite(s) (concurrent enrollment required)

NA

17d. Other Restriction(s)

17e. Registration Restriction(s) (non-codable)

18. ☑ Mark if course has fees

19. Justification for Action

To align the format of the Introductory Astronomy classes with most other natural science classes at UAA; students will be able to take the lecture component with or without the lab.

Curriculum Committee Chairperson Date
University of Alaska Anchorage  
Course Content Guide  
ASTR A104L Introductory Astronomy II Lab

I. Date of Initiation  
February 27, 2007

II. Course Information

A. College: CAS
B. Department: Physics & Astronomy
C. Course Subject: ASTR
D. Course Number: A104L
E. Number of Credits/CEU: 1.0
F. Number of Contact Hours: 0+3
G. Course Title: Introductory Astronomy II Lab
H. Grading Basis: A-F
I. Course Description: Introductory astronomy laboratory with experiments in basic observational methods and data analysis applicable to the study of the Sun, stellar, galactic, and extragalactic astronomy. Special note: May be taken out of sequence, but not recommended.
J. Course Prerequisite: ASTR A104 or concurrent enrollment
K. Fees: Yes
L. Implementation Date: Fall 2007

III. Course Activities
Standard laboratory class. Students will carry out assigned experimental procedures in a combination laboratory and outdoors (weather permitting) environment using lab equipment, research data, and/or computer simulations.

IV. Evaluation
The grading scale is A-F. The student will be evaluated on a weekly basis through their preparatory work for labs, their participation and level of completion of the labs and a lab final.

V. Course Level Justification
This course is a lower division course usually taken by freshmen and sophomores.

VI. Outline
Specific labs depend on each campus’ availability of lab equipment.
Observational Labs:
1. Using a starfinder
2. Identifying constellations
3. Locating celestial objects with a coordinate grid
4. Sunspots and the determination of the solar rotational period
5. Star colors and temperatures
6. Variable stars: Algol and Delta Cephei
7. Deep sky objects

**Classroom Labs:**
1. Orbital elements
2. Optics
3. Understanding the function of and using telescopes
4. Atomic spectra
5. Measuring the emission lines of Hydrogen and Helium
6. Spectral Classification
7. Photometry and Spectroscopy
8. Pleiades: age and distance of a star cluster using spectroscopic and photometric data
9. Parallax
10. Hyades: distance determination from proper motion data
11. Analyzing HR-diagrams of star clusters
12. Flow of energy out of the Sun
13. Using the Doppler shift to determine the orbits of binary stars

**VII. Instructional Goals and Student Outcomes**

A. Instructional Goals. The instructor will present:
1. Weekly laboratory work to reinforce and give hands-on experience with most of the primary topics covered in the lecture.
2. The opportunity to handle optical instruments, primarily telescopes.
3. Techniques and equipment useful in the study of astronomical phenomena.

B. Student Outcomes. The student will demonstrate the ability to:

**Student Outcomes**

- Work with the tools used in making basic astronomical observations.
- Make basic observations of astronomical phenomena, create reliable observation records, and analyze data collected in experiments.
- Identify ways in which their own astronomical observations have advanced their understanding of important natural processes.

**Assessment Procedures**

- Written lab reports, exams, optional student presentations, observation of performance in lab.
- Written lab reports, exams, optional student presentations, observation of performance in lab.
- Written lab reports, exams, optional student presentations, observation of performance in lab.

**VIII. Suggested Texts (at option of instructor)**

IX. **Bibliography and Resources**


Library Resource Form

Excerpts from the Northwest Association of Schools and Colleges Accreditation Handbook 1999 Edition

Standard Five - Library And Information Resources
Standard 5.A - Purpose and Scope
The primary purpose for library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution's mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

Standard Two - Educational Program And Its Effectiveness
Standard 2.A. - General Requirements
2.A.8 Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.

Program/Course Title: ASTR A104L Introductory Astronomy II Lab

1. Please identify the library liaison consulted in preparation of this proposal.

   Name: Daria Carle

   To see who your library liaison is at:
   UAA go to: http://www.lib.uaa.alaska.edu/webgroup/liaison.php3
   Kenai Peninsula College go to: http://www.rrc.alaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
   Kodiak College go to: http://www.koc.alaska.edu/library/default.html
   Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.

   1. N.A.
   2.
   3.

Initiator signature
MEMO TO: Accounting & Enrollment Services  subj: LAB FEE REQUEST

DEPARTMENT FROM: Physics and Astronomy

Course & Title: ASTR A104L Introductory Astronomy II Lab

Year: 2007  Section: Spring 001- Summer 301- Fall all sections

Lab Fee Account Number: 11055  104110

<table>
<thead>
<tr>
<th>Current Lab Fee</th>
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<th>Total Lab Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ ___________</td>
<td>Initiate - Increase - Decrease - Delete (Please Circle One)</td>
<td>$ ________ 50</td>
</tr>
<tr>
<td>$ ________ 50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Justification: There has always been a lab fee attached to ASTR A104 to provide for the associated lab ASTR A104L. Since the lab is being created as a separate class, the fee is being dropped from ASTR A104 and initiated for the new ASTR A104L laboratory. There is continuous need for funds to replace damaged equipment, purchase new apparatus, keep software license fees paid up to date, maintain electronics (printers, scanners, etc.). In the table are some sample annual costs. All labs share use of common equipment between physics and astronomy experiments. Average annual costs total over $25,000.

Justification Worksheet: Materials/Supplies Used (list each item separately)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. replacement computer interfaces (two annually)</td>
<td>$1,600</td>
</tr>
<tr>
<td>2. replacement electronic tubes (two annually)</td>
<td>$1,800</td>
</tr>
<tr>
<td>3. software license annual renewal fees</td>
<td>$1,600</td>
</tr>
<tr>
<td>4. replacement of out-dated or damaged equipment</td>
<td>$12,000</td>
</tr>
<tr>
<td>5. new experiments (varies year to year)</td>
<td>$5000 - $10,000</td>
</tr>
<tr>
<td>6. consumables (thermometers, clamps, etc.)</td>
<td>$1,000</td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
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<tr>
<td>9.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
</tr>
</tbody>
</table>

Total Cost avg. $25,500 / 480/year = $53 Cost Per Student Enrollment

Department Chair's Signature Date

Recommended Disapproved

Associate Dean, CAS Date

Recommended Disapproved

Dean, CAS Date

Approved Disapproved

Provost Date

cc: Accounting Services
CAS Budget Office
Enrollment Services
Department Administrative Assistant/Secretary

revised 04/03/00
Resource Implication Form

1. School/College CAS

2. Program/Course Physics and Astronomy

3. Course Prefix ASTR

4. Course Number A104L

5. Implementation Date Fall 2007

6. Type of Action and Category
   - ☑ Course addition
   - ☐ Course change
   - ☐ Program addition
   - ☐ Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - ☐ part-time faculty
   - ☐ new full-time faculty
   - ☑ reassignment of full-time faculty
   - ☐ additional class/lab space
   - ☐ modification of class/lab space
   - ☐ additional library resources
   - ☐ additional computer equipment
   - ☐ other costs

   Explanation: No additional costs will be incurred. This action separates a lab component from a lecture; both lecture and lab currently exist as a 3+3 contact hour, 4 credit course.

Approved

Disapproved

Department Chair

Date

Approved

Disapproved

Dean/Director of School/College

Date

Approved

Disapproved

Provost

Date
Curriculum Coordination Form

Notification Date: February 9, 2007

Initiating unit: Physics and Astronomy

Affected unit(s):

Course Prefix and Number: ASTR A104L   Previous Prefix and Number:

Complete Course/Program Title: Introductory Astronomy II Lab

Previous Course/Program Title:

Description of Action: ASTR A104L is a new lab course (0+3) for 1 credit which accompanies Introductory Astronomy II (ASTR A104). ASTR A104 is being changed to (3+0) for 3 credits.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
### Curriculum Action Request

**University of Alaska Anchorage**

Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>AS CAS</th>
<th>1b. Division</th>
<th>AMSC Division of Math Science</th>
<th>1c. Department</th>
<th>Physics and Astronomy</th>
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</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>PHYS</th>
<th>3. Course Number</th>
<th>A123</th>
<th>4. Previous Course Prefix &amp; Number</th>
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</table>

<table>
<thead>
<tr>
<th>5a. Credits/CEU</th>
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<th>5b. Contact Hours</th>
<th>(Lecture + Lab)</th>
<th>(3+0)</th>
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</table>

<table>
<thead>
<tr>
<th>6. Complete Course/Program Title</th>
<th>Basic Physics I</th>
</tr>
</thead>
</table>

Abbreviated Title for Transcript (30 characters)

<table>
<thead>
<tr>
<th>7. Type of Course</th>
<th>☑ Academic</th>
<th>☐ Non-credit</th>
<th>☐ CEU</th>
<th>☐ Professional Development</th>
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</table>

<table>
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<th>8. Type of Action</th>
<th>☑ Add</th>
<th>☐ Change</th>
<th>☐ Delete</th>
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</thead>
</table>

Mark appropriate boxes:

- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Other Restrictions
  - Class
  - Level
- College
- Major
- Other CCG

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<th>9. Repeat Status</th>
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<th># of Repeats</th>
<th>Max Credits</th>
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<th>☐ P/NP</th>
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<th>11. Implementation Date</th>
<th>semester/year</th>
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</thead>
</table>

From: Fall/2007 To: /9999

<table>
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<th>12. ☑ Cross Listed with</th>
<th>Stacked</th>
<th>with</th>
<th>Cross-Listed Coordination Signature</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>13. List any programs or college requirements that require this course</th>
</tr>
</thead>
</table>

- BA: Biology, BS: Aviation Technology, Biology, Computer Science, Geology, Geomatics, Natural Science

<table>
<thead>
<tr>
<th>14. Coordinate with Affected Units:</th>
</tr>
</thead>
</table>


Emailed faculty list-serve and all documents available at http://salt.uaa.alaska.edu/curriculum.

Department, School, or College

Initiator Signature | Date

<table>
<thead>
<tr>
<th>15. ☑ General Education Requirement</th>
</tr>
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</table>

- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

<table>
<thead>
<tr>
<th>16. Course Description</th>
</tr>
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</table>

Non-calculus introduction to mechanics, fluids, and thermodynamics. Emphasizes motion, forces, gravitation, fluid motion, and laws of thermodynamics. Limited emphasis on historical development of physics.

<table>
<thead>
<tr>
<th>17a. Course Prerequisite(s) (list prefix and number)</th>
<th>MATH A105</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>17b. Test Score(s)</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>17c. Co-requisite(s) (concurrent enrollment required)</th>
<th>NA</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>17d. Other Restriction(s)</th>
<th>17e. Registration Restriction(s) (non-codable)</th>
</tr>
</thead>
</table>

- High school trigonometry

| 18. ☑ Mark if course has fees |

<table>
<thead>
<tr>
<th>19. Justification for Action</th>
</tr>
</thead>
</table>

Periodic review and rewrite of course content guide.

Initiator (faculty only) | Date

Approval

Disapproval

Dean/Director of School/College | Date

Approval

Disapproval

Department Chairperson | Date

Approval

Disapproval

Undergraduate or Graduate Academic Board Chairperson | Date

Approval

Disapproval

Provost or Designee | Date

50

Date
I. Initiation Date: February 27, 2007

II. Course Information
   A. College: College of Arts and Sciences
      Department: Physics and Astronomy
   B. Course Subject: PHYS
   C. Course Number: A123
   D. Number of Credits/CEU: 3.0
   E. Number of Contact Hours: 3+0
   F. Course Title: Basic Physics I
   G. Grading Basis: A-F
   H. Course Description: Non-calculus introduction to mechanics, fluids, and thermodynamics. Emphasizes motion, forces, gravitation, fluid motion, and laws of thermodynamics. Limited emphasis on historical development of physics.
   I. Course Prerequisite: MATH A105
   J. Registration Restrictions: High school trigonometry
   K. Status of course relative to degree or certificate programs:
      BA: Biology
      BS: Aviation Technology, Biology, Computer Science, Geology, Geomatics, Natural Science
      AAS: Computer Electronics, Construction Management, Geomatics, Industrial Process Instrumentation, Process Technology, Professional Piloting
   L. Fees: No
   M. Coordination: Aviation, Biology, Computer Science, Construction Management, Geology, Geomatics, Industrial Process Instrumentation, Process Technology
   N. Implementation Date: Fall 2007

III. Course Activities
    Standard lecture class. Mainly lectures and demonstrations by instructor.

IV. Evaluation
    Evaluation will be primarily by regular, in class exams. At the discretion of the instructor, graded homework and/or quizzes may also be utilized.

V. Course Level Justification
    This is a traditional freshman level class throughout the country. The prerequisites are consistent with the 100 level classification.
VI. Outline
A. Mechanics
   1. Motion in one Dimension
   2. Multi-Dimensional Motion
   3. Newton’s Laws and Applications
   4. Work, Energy, and Power
   5. Momentum and Applications
   6. Rotational/Angular Motion
   7. Solid and Fluids
B. Thermodynamics
   1. Temperature versus Heat
   2. Thermal Properties of Matter
   3. Gas Laws
   4. Laws of Thermodynamics

VII. Instructional Goals and Student Outcomes
A. Instructional Goals. The instructor will:
   1. Present important underlying laws and assumptions of basic mechanics and thermodynamics.
   2. Present the general methods for analyzing physical situations and developing logical solutions to specific questions involving mechanics and thermodynamics through the mechanism of various specific problems.
   3. Present, in a limited way, the scientific ideas of the course in an historical context.

   B. Student Outcomes. The students will demonstrate:

<table>
<thead>
<tr>
<th>Student Outcomes</th>
<th>Assessment Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ability to answer conceptual questions involving mechanics and thermodynamics.</td>
<td>Objective exams with possible quizzes and/or graded homework at instructor’s option.</td>
</tr>
<tr>
<td>The ability to start with a set of observations and/or data, convert these to a mathematical expression, and solve this expression for a specific solution to a given question.</td>
<td>Objective exams with possible quizzes and/or graded homework at instructor’s option.</td>
</tr>
<tr>
<td>The ability to identify certain important concepts of nature discovered by physicists (such as the “clockwork universe”) and the impact of these concepts in advancing understanding of important natural processes.</td>
<td>Objective exams with possible quizzes and/or graded homework at instructor’s option.</td>
</tr>
</tbody>
</table>

VIII. Suggested Texts (at option of instructor)
IX. Bibliography and Resources

Curriculum Coordination Form

Notification Date: February 9, 2007

Initiating unit: Physics and Astronomy


Course Prefix and Number: PHYS A123
Previous Prefix and Number: 

Complete Course/Program Title: Basic Physics I
Previous Course/Program Title: 

Description of Action: PHYS A123 is an existing course; its CCG is being updated.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

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Governance Office, ADM 213
3211 Providence Drive
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Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Library Resource Form

Excerpts from the Northwest Association of Schools and Colleges Accreditation Handbook 1999 Edition

Standard Five - Library And Information Resources
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The primary purpose for library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution's mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

Standard Two - Educational Program And Its Effectiveness
Standard 2.A. - General Requirements
2.A.8 Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.

Program/Course Title: PHYS A123, Basic Physics I

1. Please identify the library liaison consulted in preparation of this proposal.

   Name: Daria O. Carle

   To see who your library liaison is at:
   UAA go to: http://www.lib.uaa.alaska.edu/webgroup/liaison.php3
   Kenai Peninsula College go to: http://www.uaa.alaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
   Kodiak College go to: http://www.koc.alaska.edu/library/default.html
   Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.

   Library holdings are adequate for this course.

_____________________________________________________________
Initiator signature
Resource Implication Form

1. School/College CAS

2. Program/Course Physics and Astronomy

3. Course Prefix PHYS

4. Course Number A123

5. Implementation Date Fall 2007

6. Type of Action and Category
   - Course addition
   - Course change
   - Program addition
   - Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - part-time faculty
   - new full-time faculty
   - reassignment of full-time faculty
   - additional class/lab space
   - modification of class/lab space
   - additional library resources
   - additional computer equipment
   - other costs

8. Explanation: Updating CCG only; no resource implications.

______ Approved

______ Disapproved

Department Chair ___________________________ Date ___________________________

______ Approved

______ Disapproved

Dean/Director of School/College ___________________________ Date ___________________________

______ Approved

______ Disapproved

Provost ___________________________ Date ___________________________
# Curriculum Action Request

**University of Alaska Anchorage**

**Proposal to Initiate, Add, Change, or Delete a Course or Program of Study**

---

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS CAS</td>
<td>AMSC Division of Math Science</td>
<td>Physics and Astronomy</td>
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<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEU</th>
<th>5b. Contact Hours</th>
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<tbody>
<tr>
<td>PHYS</td>
<td>A123L</td>
<td></td>
<td>3</td>
<td>(Lecture + Lab)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0+3)</td>
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<table>
<thead>
<tr>
<th>6. Complete Course/Program Title</th>
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<tbody>
<tr>
<td><strong>Basic Physics I Laboratory</strong></td>
</tr>
</tbody>
</table>

**Abbreviated Title for Transcript (30 character)**

<table>
<thead>
<tr>
<th>7. Type of Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Academic</td>
</tr>
<tr>
<td>☐ Non-credit</td>
</tr>
<tr>
<td>☐ CEU</td>
</tr>
<tr>
<td>☐ Professional Development</td>
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<th>8. Type of Action</th>
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</thead>
<tbody>
<tr>
<td>☑ Course</td>
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<tr>
<td>☐ Program</td>
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<th>9. Repeat Status</th>
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<table>
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<tr>
<th>10. Grading Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ A-F</td>
</tr>
<tr>
<td>☐ P/NP</td>
</tr>
<tr>
<td>☐ NG</td>
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<table>
<thead>
<tr>
<th>11. Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>From: Fall/2007</strong></td>
</tr>
<tr>
<td><strong>To: 9999</strong></td>
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<table>
<thead>
<tr>
<th>12. Cross Listed with</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Stacked</td>
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<table>
<thead>
<tr>
<th>13. List any programs or college requirements that require this course</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA: Biology, BS: Aviation Technology, Biology, Computer Science, Geology, Geomatics, Natural Science</td>
</tr>
<tr>
<td>AAS: Computer Electronics, Construction Management, Geomatics, Industrial Process Instrumentation, Process Technology, Professional Piloting</td>
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<table>
<thead>
<tr>
<th>14. Coordinate with Affected Units:</th>
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</thead>
<tbody>
<tr>
<td>Emailed faculty list-serve and all documents available at <a href="http://salt.uaa.alaska.edu/curriculum">http://salt.uaa.alaska.edu/curriculum</a>.</td>
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</table>

<table>
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<tr>
<th>15. General Education Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Oral Communication</td>
</tr>
<tr>
<td>☑ Written Communication</td>
</tr>
<tr>
<td>☑ Quantitative Skills</td>
</tr>
<tr>
<td>☑ Humanities</td>
</tr>
<tr>
<td>☑ Fine Arts</td>
</tr>
<tr>
<td>☑ Social Sciences</td>
</tr>
<tr>
<td>☑ Natural Sciences</td>
</tr>
<tr>
<td>☑ Integrative Capstone</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory physics laboratory, with experiments in mechanics, fluids, and thermodynamics.</td>
</tr>
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<table>
<thead>
<tr>
<th>17a. Course Prerequisite(s) (list prefix and number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH A105 and (PHYS A123 or concurrent enrollment)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17b. Test Score(s)</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>17c. Co-requisite(s) (concurrent enrollment required)</th>
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</table>

<table>
<thead>
<tr>
<th>17d. Other Restriction(s)</th>
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<tr>
<td>☐ College</td>
</tr>
<tr>
<td>☐ Major</td>
</tr>
<tr>
<td>☐ Class</td>
</tr>
<tr>
<td>☐ Level</td>
</tr>
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<td>☑ High school Trigonometry</td>
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<tr>
<td>☑ High school Trigonometry</td>
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<table>
<thead>
<tr>
<th>18. Mark if course has fees</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>19. Justification for Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periodic review and rewrite of course content guide.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>20. Initator (faculty only)</th>
<th>Date</th>
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<tr>
<th>21. Approved (Dean/Director of School/College)</th>
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<tr>
<td>☑ Approved</td>
<td>Disapproved</td>
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</table>

<table>
<thead>
<tr>
<th>22. Approved (Department Chairperson)</th>
<th>Disapproved</th>
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</thead>
<tbody>
<tr>
<td>☑ Approved</td>
<td>Disapproved</td>
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<tr>
<th>23. Approved (Academic Board Chairperson)</th>
<th>Disapproved</th>
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<tr>
<td>☑ Approved</td>
<td>Disapproved</td>
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</table>

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<tr>
<th>24. Approved (Provost or Designee)</th>
<th>Disapproved</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Approved</td>
<td>Disapproved</td>
</tr>
</tbody>
</table>
University of Alaska Anchorage
Course Content Guide
PHYS A123L Basic Physics I Laboratory

I. Initiation Date: February 27, 2007

II. Course Information
   A. College: College of Arts and Sciences
      Department: Physics and Astronomy
   B. Course Subject: PHYS
   C. Course Number: A123L
   D. Number of Credits/CEU: 1.0
   E. Number of Contact Hours: 0+3
   F. Course Title: Basic Physics I Laboratory
   G. Grading Basis: A-F
   H. Course Description: Introductory physics laboratory, with experiments in mechanics, fluids, and thermodynamics.
   I. Course Prerequisites: MATH A105 and (PHYS A123 or concurrent enrollment)
   J. Registration Restriction: High school trigonometry
   K. Status of course relative to degree or certificate programs:
      BA: Biology
      BS: Aviation Technology, Biology, Computer Science, Geology, Geomatics, Natural Science
      AAS: Computer Electronics, Construction Management, Geomatics, Industrial Process Instrumentation, Process Technology, Professional Piloting
   L. Fees: Yes
   M. Coordination: Aviation, Biology, Computer Science, Construction Management, Geology, Geomatics, Industrial Process Instrumentation, Process Technology
   N. Implementation Date: Fall 2007

III. Course Level Justification
Basic Physics is a traditional freshman level class throughout the country. The prerequisites are consistent with the 100 level classifications.

IV. Outline of Typical Experiments
A general set of guidelines for typical laboratory experiments is given below. This list may be changed based on equipment available or the development of new experimental techniques. In general, a total of twelve to thirteen experiments will be done per semester.

1. Introduction to Computer Data Collection Software
2. Method of Least Squares
3. Vectors
4. Straight Line Motion at Constant Speed
5. Uniformly Accelerated Motion, Part 1
6. Uniformly Accelerated Motion, Part 2
7. Atwood Machine
8. Kinetic Energy – Work Theorem
9. Collisions
10. Ballistic Pendulum
11. Static Equilibrium
12. Archimedes Principle
13. Thermal Coefficient of Linear Expansion
14. Mechanical Equivalent of Heat

V. Instructional Goals and Defined Outcomes

Instructional Goals:
1. The use of computer software and hardware for the purpose of data collection and analysis should help
the student identify ways in which science has advanced the understanding of basic but important natural
processes; for example; motion, electricity and magnetism.
2. The laboratory experience should help the student in their abilities to reason mathematically, and
analyze quantitative and qualitative data competently to reach reasonable and sound conclusions.
3. Students should be able to present experimental goals, data, and analysis of the data in some form of
effective verbal or written communication; for example an oral presentation or a written laboratory report.

To accomplish the instructional goals outlined above the following student outcomes and assessment
procedures have been established:

Outcomes and Assessment Measures

<table>
<thead>
<tr>
<th>Student Outcomes</th>
<th>Assessment Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate the ability to work with the tools provided in the laboratory to obtain reliable experimental data.</td>
<td>Any combination of the following: Lab reports, quizzes, exams, oral presentations and performance in conducting experiments.</td>
</tr>
<tr>
<td>Demonstrate the ability to critically observe experimental processes and accurately record and analyze quantitative data to reach sound conclusions using mathematically correct reasoning.</td>
<td>Any combination of the following: Lab reports, quizzes, exams, oral presentations and performance in conducting experiments.</td>
</tr>
</tbody>
</table>

VI. Suggested Texts (at option of instructor)
In house lab manual
Edmonds, D. S. (1993), Cioffari's Experiments in College Physics, (Heath)
Wilson, J. D., and Hernandez, C. A., (2005), Physics Laboratory Experiments, (Houghton Mifflin)

VII. Bibliography and Resources
For equipment and supplies:
Pasco Scientific (http://www.pasco.com).
Sargent Welch (http://www.sargentwelch.com)
Curriculum Coordination Form

Notification Date: February 9, 2007

Initiating unit: Physics and Astronomy


Course Prefix and Number: PHYS A123L

Complete Course/Program Title: Basic Physics I Laboratory

Previous Course/Program Title:

Description of Action: PHYS A123L is an existing course; its CCG is being updated.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Library Resource Form

Excerpts from the Northwest Association of Schools and Colleges Accreditation Handbook 1999 Edition

Standard Five - Library And Information Resources
Standard 5.A - Purpose and Scope
The primary purpose for library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution's mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

Standard Two - Educational Program And Its Effectiveness
Standard 2.A - General Requirements
2.A.8 Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.

Program/Course Title: PHYS A123L, Basic Physics I Laboratory

1. Please identify the library liaison consulted in preparation of this proposal.
   Name: Daria O. Carle

To see who your library liaison is at:
UAA go to: http://www.lib.uaa.alaska.edu/webgroup/liaison.php3
Kenai Peninsula College go to: http://www.uaa.alaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
Kodiak College go to: http://www.koc.alaska.edu/library/default.html
Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.
   Library holdings are adequate for this course.

_____________________________________________________
Initiator signature
MEMO TO: Accounting & Enrollment Services  subj: LAB FEE REQUEST

DEPARTMENT FROM: Physics and Astronomy

Course & Title: PHYS A123L Basic Physics I Laboratroy

Year: 2007  Section: Spring 001-  Summer 301-  Fall all sections

Lab Fee Account Number: 11055  104110

Initiate - Increase - Decrease - Delete

$ 45 (Please Circle One) $ 50

Justification: It has been about 15 years since the last adjustment of lab fees. In the interim equipment and software costs have continued to increase. The Physics and Astronomy labs do not have materials and supplies in the sense of chemicals, etc. There is a continuous need for funds to replace damaged equipment, purchase new apparatus, keep software license fees paid up to date, maintain electronics (printers, scanners, etc.). In the table are listed some sample annual costs. All labs share use of common equipment between physics and astronomy experiments. Average annual costs exceed $25,000.

Justification Worksheet: Materials/Supplies Used (list each item separately)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. replacement computer interfaces (two annually)</td>
<td>$1,600</td>
</tr>
<tr>
<td>2. replacement electronic tubes (two annually)</td>
<td>$1,800</td>
</tr>
<tr>
<td>3. software license annual renewal fees</td>
<td>$1,600</td>
</tr>
<tr>
<td>4. replacement of out-dated or damaged equipment</td>
<td>$12,000</td>
</tr>
<tr>
<td>5. new experiments (varies year to year)</td>
<td>$5000-$10,000</td>
</tr>
<tr>
<td>6. consumables (thermometers, clamps, etc.)</td>
<td>$1,000</td>
</tr>
</tbody>
</table>

Total Cost: \( \frac{\text{avg. } \$25,500}{480/\text{year}} = \$53 \)

Department Chair’s Signature Date

Associate Dean, CAS Date

Dean, CAS Date

Provost Date

cc: Accounting Services
CAS Budget Office
Enrollment Services
Department Administrative Assistant/Secretary

revised 04/03/00
Resource Implication Form

1. School/College CAS
2. Program/Course Physics and Astronomy
3. Course Prefix PHYS
4. Course Number A123L
5. Implementation Date Fall 2007
6. Type of Action and Category
   - [ ] Course addition
   - [x] Course change
   - [ ] Program addition
   - [ ] Program change
7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - [ ] part-time faculty
   - [ ] new full-time faculty
   - [ ] reassignment of full-time faculty
   - [ ] additional class/lab space
   - [ ] modification of class/lab space
   - [ ] additional library resources
   - [ ] additional computer equipment
   - [ ] other costs

8. Explanation: Updating CCG only. No resource implications.

Approved

Disapproved

Department Chair  Date

Approved

Disapproved

Dean/Director of School/College  Date

Approved

Disapproved

Provost  Date
# Curriculum Action Request

**University of Alaska Anchorage**

Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

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<td>AMSC Division of Math Science</td>
</tr>
<tr>
<td>1c. Department</td>
<td>Physics and Astronomy</td>
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<th>2. Course Prefix</th>
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<td>3. Course Number</td>
<td>A124</td>
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<tr>
<td>4. Previous Course Prefix &amp; Number</td>
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</tr>
<tr>
<td>5a. Credits/CEU</td>
<td>3</td>
</tr>
<tr>
<td>5b. Contact Hours (Lecture + Lab)</td>
<td>(3+0)</td>
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<table>
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<tr>
<th>6. Complete Course/Program Title</th>
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<tr>
<td>Basic Physics II</td>
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Abbreviated Title for Transcript (30 character)

<table>
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<th>7. Type of Course</th>
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<tr>
<td>8. Type of Action</td>
<td>Course</td>
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(mark appropriate boxes)

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<tr>
<th>8. Type of Action</th>
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(mark appropriate boxes)

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<th>8. Type of Action</th>
<th>Delete</th>
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(mark appropriate boxes)

<table>
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<tr>
<th>9. Repeat Status No</th>
<th># of Repeats</th>
<th>Max Credits</th>
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<th>10. Grading Basis</th>
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<th>P/NP</th>
<th>NG</th>
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<tr>
<th>11. Implementation Date</th>
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<tbody>
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<td>semester/year</td>
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<tr>
<td>To: /9999</td>
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<tr>
<th>12. Cross Listed with</th>
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<tr>
<td>Stacked with</td>
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</table>

Cross-Listed Coordination Signature

<table>
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<tr>
<th>13. List any programs or college requirements that require this course</th>
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</thead>
<tbody>
<tr>
<td>BA: Biology, BS: Biology, Computer Science, Geology, Geomatics, Natural Science, AAS: Computer Electronics</td>
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</table>

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<th>14. Coordinate with Affected Units:</th>
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<td>Biology, Computer Electronics, Computer Science, Geology, Geomatics. Emailed faculty list-serve and all documents available at <a href="http://salt.uaa.alaska.edu/curriculum">http://salt.uaa.alaska.edu/curriculum</a>.</td>
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Initiator Signature Date

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<th>15. General Education Requirement</th>
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<tr>
<th>16. Course Description</th>
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<tbody>
<tr>
<td>Non-calculus introduction to electricity and magnetism, waves, optics, light, some modern and nuclear physics. Limited emphasis on historical development of physics.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17a. Course Prerequisite(s) (list prefix and number)</th>
<th>PHYS A123 with minimum grade of C</th>
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<tr>
<td>17b. Test Score(s)</td>
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</tr>
<tr>
<td>17c. Co-requisite(s) (concurrent enrollment required)</td>
<td>NA</td>
</tr>
<tr>
<td>17d. Other Restriction(s)</td>
<td></td>
</tr>
<tr>
<td>17e. Registration Restriction(s) (non-codable)</td>
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| 18. Mark if course has fees |

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<th>19. Justification for Action</th>
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<td>Periodic review and rewrite of course content guide.</td>
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<th>Disapproved</th>
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Initiator (faculty only) Date

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Department Chairperson Date

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<tr>
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Undergraduate or Graduate Academic Board Chairperson Date

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<tr>
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<th>Disapproved</th>
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Curriculum Committee Chairperson Date

<table>
<thead>
<tr>
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<th>Disapproved</th>
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</table>

Provost or Designee Date
University of Alaska Anchorage  
Course Content Guide  
PHYS 124 Basic Physics II

I. Date of Initiation  
February 27, 2007

II. Course Information
   A. College: CAS
   B. Department: Physics & Astronomy
   C. Course Subject: PHYS
   D. Course Number: A124
   E. Number of Contact Hours: 3+0
   F. Course Title: Basic Physics II
   G. Grading Basis: A-F
   H. Course Description: Non-calculus introduction to electricity and magnetism, waves, optics, light, some modern and nuclear physics. Limited emphasis on historical development of physics.
   I. Course Prerequisite: PHYS A123 with minimum grade of C
   J. Status of course relative to degree or certificate programs:
      BA: Biology
      BS: Biology, Computer Science, Geology, Geomatics, Natural Science
      AAS: Computer Science
   K. Fees: No
   L. Coordination: Biology, Computer Electronics, Computer Science, Geology, Geomatics
   M. Implementation Date: Fall 2007

III. Course Activities
   Standard lecture class. Mainly lectures and demonstrations by instructor.

IV. Evaluation
   Evaluation will be primarily by regular, in class exams. At the discretion of the instructor, graded homework and/or quizzes may be utilized also.

V. Course Level Justification
   This is a traditional freshman level class throughout the country. The prerequisites are consistent with the 100 level classification.

VI. Outline
   A. Vibrations and Waves
      1. Simple Harmonic Motion
2. The Periodic Wave
3. Sound
4. Interference
B. Electricity and Magnetism
1. Electric Charge
2. Coulomb’s Law and the Electric Field
3. Electric Potential
4. Ohm’s Law and Resistive Circuitry (DC and AC)
5. Capacitive Circuitry
6. The Magnetic Field and Ampere’s Law
7. Magnetic Force on Charge
8. Magnetic Flux, Faraday’s Law, and Lenz’s Law
9. Electromagnetic Devices
C. Light and Optics
1. Wave versus Particle Models
2. The EM Wave and Wave Optics
3. Geometrical Optics and Optical Instruments
D. Modern Physics (optional as time permits)
1. Elementary Special Relativity
2. Simple Quantum Mechanics
3. Basic Nuclear Concepts and Techniques

VII. Instructional Goals and Defined Outcomes
A. Instructional Goals: The instructor will:
1. Present important and underlying laws and assumptions of basic vibratory motion, waves, electricity, magnetism, and optics.
2. Present the general methods for analyzing physical situations and developing logical solutions to specific questions involving basic vibratory motion, waves, electricity, magnetism, and optics through the mechanism of various specific problems.
3. Present, in a limited way, the scientific ideas of the course in an historical context.
B. Defined Outcomes. The student will demonstrate:

Student Outcomes
The ability to answer conceptual questions involving basic vibratory motion, waves, electricity, magnetism, and optics.
The ability to start with a set of observations and/or data, convert these to a mathematical expression, and solve this expression for a specific solution to a given question.
The ability to identify certain important concepts of nature discovered by physicists (such as electromagnetic fields) and the impact of these concepts in advancing understanding of important natural processes.

Assessment Procedures
Objective exams with possible quizzes and/or graded homework at instructor’s option.
Objective exams with possible quizzes and/or graded homework at instructor’s option.
Objective exams with possible quizzes and/or graded homework at instructor’s option.
VIII.  Suggested Texts (at option of instructor)


IX.  Bibliography and Resources

Knight, **Five Easy Lessons**. Sansome, CA: Addison Wesley, 2002.
Library Resource Form

Excerpts from the Northwest Association of Schools and Colleges Accreditation Handbook 1999 Edition

Standard Five - Library And Information Resources
Standard 5.A - Purpose and Scope
The primary purpose for library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution's mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

Standard Two - Educational Program And Its Effectiveness
Standard 2.A. - General Requirements
2.A.8 Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.

Program/Course Title: PHYS A124, Basic Physics II

1. Please identify the library liaison consulted in preparation of this proposal.

   Name: Daria O. Carle

   To see who your library liaison is at:
   UAA go to: http://www.lib.uaa.alaska.edu/webgroup/liaison.php3
   Kenai Peninsula College go to: http://www.uaa.alaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
   Kodiak College go to: http://www.koc.alaska.edu/library/default.html
   Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.

   Library holdings are adequate for this course.

   ________________________________
   Initiator signature
Resource Implication Form

1. School/College CAS

2. Program/Course Physics and Astronomy

3. Course Prefix PHYS

4. Course Number A124

5. Implementation Date Fall 2007

6. Type of Action and Category
   ☑ Course addition  ☑ Course change  ☐ Program addition  ☐ Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.

   - part-time faculty $  
   - new full-time faculty $  
   - reassignment of full-time faculty $  
   - additional class/lab space $  
   - modification of class/lab space $  
   - additional library resources $  
   - additional computer equipment $  
   - other costs $  

8. Explanation: Updating CCG only; no resource implications.

________ Approved

________ Disapproved  Department Chair  Date

________ Approved  Dean/Director of School/College  Date

________ Approved  Provost  Date
Curriculum Coordination Form

Notification Date: February 9, 2007

Initiating unit: Physics and Astronomy

Affected unit(s): Biology, Computer Electronics, Computer Science, Geology, Geomatics

Course Prefix and Number: PHYS A124

Previous Prefix and Number:

Complete Course/Program Title: Basic Physics II

Previous Course/Program Title:

Description of Action: PHYS A124 is an existing course; its CCG is being updated.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Curriculum Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

1a. School or College  
AS CAS

1b. Division  
AMSC Division of Math Science

1c. Department  
Physics and Astronomy

2. Course Prefix  
PHYS

3. Course Number  
A124L

4. Previous Course Prefix & Number

5. Credits/CEU  
3

5b. Contact Hours  
(Lecture + Lab)  
(0+3)

6. Complete Course/Program Title  
Basic Physics II Laboratory

Abbreviated Title for Transcript (30 characters)

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

8. Type of Action  
☐ Course  ☐ Program

☐ Add  ☑ Change  ☐ Delete

☐ Prefix  ☐ Credits  ☐ Title  ☐ Grading Basis  ☐ Course Description  ☐ Test Score Prerequisites  ☐ Other Restrictions  ☐ Class  ☐ Level  ☐ College  ☐ Major  ☐ Other CCG

9. Repeat Status No  # of Repeats  Max Credits

10. Grading Basis  
☐ A-F  ☐ P/NP  ☐ NG

11. Implementation Date  
semester/year

From: Fall/2007  To: /9999

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

13. List any programs or college requirements that require this course

BA: Biology, BS: Biology, Computer Science, Geology, Geomatics, Natural Science, AAS: Computer Electronics

14. Coordinate with Affected Units:  
Biology, Computer Electronics, Computer Science, Geology, Geomatics. Emailed faculty list-serve and all documents available at http://salt.uaa.alaska.edu/curriculum.

Department, School, or College  
Initiator Signature  Date

15. ☑ General Education Requirement  
☐ Oral Communication  ☐ Written Communication  ☐ Quantitative Skills  ☐ Humanities  ☐ Fine Arts  ☐ Social Sciences  ☐ Natural Sciences  ☐ Integrative Capstone

16. Course Description  
Introductory physics laboratory, with experiments in electricity and magnetism, waves, and optics.

17a. Course Prerequisite(s) (list prefix and number)  
PHYS A123 with minimum grade of C  
and PHYS A123L with minimum grade of C  
and (PHYS A124 or concurrent enrollment).

17b. Test Score(s)

17c. Co-requisite(s) (concurrent enrollment required)

17d. Other Restriction(s)  

17e. Registration Restriction(s) (non-codable)  

18. ☑ Mark if course has fees

19. Justification for Action

Periodic review and rewrite of course content guide. Course description change reflects actual experiments done in the laboratory.

Approved  Disapproved:

Initiator (faculty only)  Date  Dean/Director of School/College  Date

Approved  Disapproved:

Department Chairperson  Date  Undergraduate or Graduate  Academic Board Chairperson  Date

Approved  Disapproved:

Curriculum Committee Chairperson  Date  Provost or Designee  Date
University of Alaska Anchorage
Course Content Guide
PHYS 124L Basic Physics II Laboratory

I. Initiation Date: February 27, 2007

II. Course Information
   A. College: College of Arts and Sciences
   Department: Physics and Astronomy
   B. Course Subject: PHYS
   C. Course Number: A124L
   D. Number of Credits/CEU: 1.0
   E. Number of Contact Hours: 0+3
   F. Course Title: Basic Physics II Laboratory
   G. Grading Basis: A-F
   H. Course Description: Introductory physics laboratory, with experiments in electricity and magnetism, waves, and optics.
   I. Course Prerequisites: PHYS A123 with minimum grade of C and PHYS A123L with minimum grade of C and (PHYS A124 or concurrent enrollment)
   J. Status of course relative to degree or certificate programs:
      BA: Biology
      BS: Biology, Computer Science, Geology, Geomatics, Natural Science
      AAS: Computer Electronics
   K. Fees: Yes
   L. Coordination: Biology, Computer Electronics, Computer Science, Geology, Geomatics
   M. Implementation Date: Fall 2007

III. Course Level Justification
   This is a traditional freshman level class throughout the country. The prerequisites are consistent with the 100 level classifications.

IV. Outline
   Below are general guidelines for laboratory experiments. The list indicates typical current experiments here at UAA but the list may be changed based on equipment available, class size and lecture topics.

1. Introduction to Computer Data Collection Software
2. Hooke’s Law and Simple Harmonic Motion
3. Standing Waves in a String
4. Sound
5. Equipotentials and Fields
6. Ohm’s Law
7. Circuit Analysis with Light Bulbs
8. Kirchhoff’s Rules
9. Electromagnetic Induction and Lenz’s Law

72
10. Building a DC motor
11. Reflection and Refraction
12. Spherical Mirrors and Lenses

V. Instructional Goals and Student Outcomes

Instructional Goals:

1. The use of computer software and hardware for the purpose of data collection and analysis should help the student identify ways in which science has advanced the understanding of basic but important natural processes; for example; motion, electricity and magnetism.

2. The laboratory experience should help the student in their abilities to reason mathematically, and analyze quantitative and qualitative data competently to reach reasonable and sound conclusions.

3. Students should be able to present experimental goals, data, and analysis of the data in some form of effective verbal or written communication; for example an oral presentation or a written laboratory report.

To accomplish the instructional goals outlined above the following student outcomes and assessment procedures have been established:

<table>
<thead>
<tr>
<th>Student Outcomes</th>
<th>Assessment Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate the ability to work with the tools provided in the laboratory to obtain reliable experimental data.</td>
<td>Any combination of the following: Lab reports, quizzes, exams, oral presentations and performance in conducting experiments.</td>
</tr>
<tr>
<td>Demonstrate the ability to critically observe experimental processes and accurately record and analyze quantitative data to reach sound conclusions using mathematically correct reasoning.</td>
<td>Any combination of the following: Lab reports, quizzes, exams, oral presentations and performance in conducting experiments.</td>
</tr>
</tbody>
</table>

VI. Suggested Texts (at option of instructor)

In house lab manual

VII. Bibliography and Resources

For equipment and supplies:
Pasco Scientific (http://www.pasco.com)
Sargent Welch (http://www.sargentwelch.com)
Curriculum Coordination Form

Notification Date: February 9, 2007

Initiating unit: Physics and Astronomy

Affected unit(s): Biology, Computer Electronics, Computer Science, Geology, Geomatics

Course Prefix and Number: PHYS A124L   Previous Prefix and Number:

Complete Course/Program Title: Basic Physics II Laboratory

Previous Course/Program Title:

Description of Action: PHYS A124L is an existing course; its CCG has been updated, and the course description has been slightly altered to reflect actual experiments.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Library Resource Form

Excerpts from the Northwest Association of Schools and Colleges Accreditation Handbook 1999 Edition

Standard Five - Library And Information Resources
Standard 5.A - Purpose and Scope
The primary purpose for library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution’s mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

Standard Two - Educational Program And Its Effectiveness
Standard 2.A. - General Requirements
2.A.8 Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.

Program/Course Title: PHYS A124L, Basic Physics II Laboratory

1. Please identify the library liaison consulted in preparation of this proposal.

   Name: Daria O. Carle

   To see who your library liaison is at:
   UAA go to: http://www.lib.uaa.alaska.edu/webgroup/liaison.php3
   Kenai Peninsula College go to: http://www.ualaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
   Kodiak College go to: http://www.koc.alaska.edu/library/default.html
   Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.

   Library holdings are adequate for this course.

______________________________________________________________
Initiator signature
MEMO TO: Accounting & Enrollment Services  subj: LAB FEE REQUEST

DEPARTMENT FROM: Physics and Astronomy

Course & Title: PHYS A124L  Basic Physics II Laboratory

Year: 2007  Section: Spring 001-  Summer 301-  Fall all sections

Lab Fee Account Number: 11055  104110

Current Lab Fee Requested Action Total Lab Fee
$ __________ $ 45 Initiate - Increase - Decrease - Delete  $ __________ $ 50
$ __________

Justification: It has been about 15 years since the last adjustment of lab fees. In the interim equipment and software costs have continued to increase. The Physics and Astronomy labs do not have materials and supplies in the sense of chemicals, etc. There is a continuous need for funds to replace damaged equipment, purchase new apparatus, keep software license fees paid up to date, maintain electronics (printers, scanners, etc.). In the table are listed some sample annual costs. All labs share use of common equipment between physics and astronomy experiments. Average annual costs exceed $25,000.

Justification Worksheet: Materials/Supplies Used (list each item separately)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. replacement computer interfaces (two annually)</td>
<td>$1,600</td>
</tr>
<tr>
<td>2. replacement electronic tubes (two annually)</td>
<td>$1,800</td>
</tr>
<tr>
<td>3. software license annual renewal fees</td>
<td>$1,600</td>
</tr>
<tr>
<td>4. replacement of out-dated or damaged equipment</td>
<td>$12,000</td>
</tr>
<tr>
<td>5. new experiments (varies year to year)</td>
<td>$5000-$10,000</td>
</tr>
<tr>
<td>6. consumables (thermometers, clamps, etc.)</td>
<td>$1,000</td>
</tr>
</tbody>
</table>

Total Cost avg. $25,500 / 480/year = $53 Cost Per Student

Department Chair's Signature  Date

Recommended  Disapproved

Associate Dean, CAS  Date

Recommended  Disapproved

Dean, CAS  Date

Approved  Disapproved

Provost  Date

cc: Accounting Services  CAS Budget Office  Enrollment Services  Department Administrative Assistant/Secretary

revised 04/03/00
Resource Implication Form

1. School/College CAS

2. Program/Course Physics and Astronomy

3. Course Prefix PHYS

4. Course Number A124L

5. Implementation Date Fall 2007

6. Type of Action and Category
   - Course addition
   - Course change
   - Program addition
   - Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - Part-time faculty
   - New full-time faculty
   - Reassignment of full-time faculty
   - Additional class/lab space
   - Modification of class/lab space
   - Additional library resources
   - Additional computer equipment
   - Other costs

8. Explanation: Updating CCG and changing course description only. No resource implications.

_______ Approved

_______ Disapproved

Department Chair ___________________________ Date ___________________________

_______ Approved

_______ Disapproved

Dean/Director of School/College ___________________________ Date ___________________________

_______ Approved

_______ Disapproved

Provost ___________________________ Date ___________________________
To:        UAB and GER subcommittee
From:     James Pantaleone, Physics Dept., CAS
Date:     February 9, 2007
Subject:  BIOL/CHEM/PHYS A456 as an Integrated Capstone Course

Here we are proposing to add the existing course BIOL/CHEM/PHYS A456 to the list of courses that satisfy the Integrated Capstone GER at UAA. This course is very well suited to be a Capstone course. It integrates knowledge across many disciplines: physics, biology, chemistry, engineering, and economics. For example, one day we may examine the evolution of hare and lynx populations while the next day we apply the same analysis techniques to the evolution of voltages in an electronic circuit. The students do this using a wide range of methods: algebraic analysis, numerical simulations plus observations of real world systems.

The study of nonlinear, complex systems is currently one of the most popular areas of research. This is because computer simulation methods have opened up many new avenues of research. The course BIOL/CHEM/PHYS A456 strives to incorporate many of the latest discoveries into its curriculum.
<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS CAS</td>
<td>AMSC Division of Math Science</td>
<td>Physics and Astronomy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEU</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS</td>
<td>A456</td>
<td></td>
<td>3</td>
<td>(3+0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Complete Course/Program Title</th>
<th>Nonlinear Dynamics and Chaos</th>
</tr>
</thead>
</table>

| 7. Type of Course | ☐ Academic | ☐ Non-credit | ☐ CEU | ☐ Professional Development |

<table>
<thead>
<tr>
<th>8. Type of Action</th>
<th>☐ Course</th>
<th>☐ Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Add</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Change (mark appropriate boxes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Delete</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 9. Repeat Status | ☐ No | ☐ # of Repeats | ☐ Max Credits |

| 10. Grading Basis | ☐ A-F | ☐ P/NP | ☐ NG |

<table>
<thead>
<tr>
<th>11. Implementation Date</th>
<th>☐ semester/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>From: Fall/2007</td>
<td>To: 19999</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. ☑ Cross Listed with</th>
<th>BIOL A456 CHEM A456</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Stacked</td>
<td>Cross-Listed Coordination Signature</td>
</tr>
</tbody>
</table>

| 13. List any programs or college requirements that require this course | |

<table>
<thead>
<tr>
<th>14. Coordinate with Affected Units</th>
<th>Emailed faculty list-serve and all documents available at <a href="http://salt.uaa.alaska.edu/curriculum/">http://salt.uaa.alaska.edu/curriculum/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Department, School, or College</td>
<td>Initiation Signature Date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. ☑ General Education Requirement</th>
<th>☐ Oral Communication</th>
<th>☐ Written Communication</th>
<th>☐ Quantitative Skills</th>
<th>☐ Humanities</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Fine Arts</td>
<td>☐ Social Sciences</td>
<td>☐ Natural Sciences</td>
<td>☐ Integrative Capstone</td>
<td></td>
</tr>
</tbody>
</table>

| 16. Course Description | An introduction to nonlinear dynamics and chaos. Concrete examples from Physics, Biology, Chemistry and Engineering are used to develop analytical methods and geometric intuition. Topics covered include phase plane analysis, iterated maps, fractals and strange attractors. |

<table>
<thead>
<tr>
<th>17a. Course Prerequisite(s)</th>
<th>Math A202 and [PHYS A124 or PHYS A212], both with minimum grade of C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>17b. Test Score(s)</td>
<td></td>
</tr>
<tr>
<td>17c. Co-requisite(s) (concurrent enrollment required)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17d. Other Restriction(s)</th>
<th>☐ College</th>
<th>☐ Major</th>
<th>☐ Class</th>
<th>☐ Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>17e. Registration Restriction(s) (non-codable)</td>
<td>Completion of GER Tier 1 (basic college-level skills) courses and junior standing.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 18. ☐ Mark if course has fees | |

| 19. Justification for Action | This is an existing course that is particularly well suited to be an Integrated Capstone GER. |

<table>
<thead>
<tr>
<th>Approved</th>
<th>Disapproved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dean/Director of School/College</td>
<td>Date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approved</th>
<th>Disapproved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Chairperson</td>
<td>Date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approved</th>
<th>Disapproved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate or Graduate Academic Board Chairperson</td>
<td>Date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approved</th>
<th>Disapproved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provost or Designee</td>
<td>Date</td>
</tr>
</tbody>
</table>
## Curriculum Action Request

**University of Alaska Anchorage**

Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

---

### 1. School or College
- **AS CAS**

### 2. Course Prefix
- **CHEM**

### 3. Course Number
- **A456**

### 4. Previous Course Prefix & Number
- **3**

### 5. Credits/CEU
- **3**

### 6. Complete Course/Program Title
- **Nonlinear Dynamics and Chaos**

### 7. Type of Course
- Academic

### 8. Type of Action
- Course

### 9. Repeat Status
- No

### 10. Grading Basis
- A-F

### 11. Implementation Date
- From: Fall/2007
- To: 9/999

### 12. Cross Listed with
- BIOL A456
- PHYS A456

### 13. List any programs or college requirements that require this course

### 14. Coordinate with Affected Units:
- Emailed faculty list-serve and all documents available at [http://salt.uaa.alaska.edu/curriculum/](http://salt.uaa.alaska.edu/curriculum/)

### 15. General Education Requirement
- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

### 16. Course Description
An introduction to nonlinear dynamics and chaos. Concrete examples from Physics, Biology, Chemistry and Engineering are used to develop analytical methods and geometric intuition. Topics covered include phase plane analysis, iterated maps, fractals and strange attractors.

### 17. Course Prerequisite(s)
- Math A202 and [PHYS A124 or PHYS A212], both with minimum grade of C

### 18. Mark if course has fees

### 19. Justification for Action
This is an existing course that is particularly well suited to be an Integrated Capstone GER.

---

**Initiator Signature**

**Date**

---

**Approved**

**Disapproved**

**Dean/Director of School/College**

**Date**

---

**Approved**

**Disapproved**

**Department Chairperson**

**Date**

---

**Approved**

**Disapproved**

**Academic Board Chairperson**

**Date**

---

**Approved**

**Disapproved**

**Provost or Designee**

**Date**
## Curriculum Action Request

### University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>AS CAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1b. Division</td>
<td>AMSC Division of Math Science</td>
</tr>
<tr>
<td>1c. Department</td>
<td>Biology</td>
</tr>
</tbody>
</table>

### 2. Course Prefix
- **BIOL**

### 3. Course Number
- **A456**

### 4. Previous Course Prefix & Number

### 5. Credits/CEU
- **3**

### 6. Complete Course/Program Title
- **Nonlinear Dynamics and Chaos**

### 7. Type of Course
- Academic
- Non-credit
- [ ] CEU
- [ ] Professional Development

### 8. Type of Action
- [ ] Add
- [x] Change
- [ ] Delete

### 9. Repeat Status
- No
- # of Repeats
- Max Credits

### 10. Grading Basis
- A-F
- P/NP
- [ ] NG

### 11. Implementation Date
- From: **Fall/2007**
- To: \( \infty \)

### 12. Cross Listed with
- PHYS A456
- CHEM A456

### 13. List any programs or college requirements that require this course

### 14. Coordinate with Affected Units:
- Emailed faculty list-serve and all documents available at [http://salt.uaa.alaska.edu/curriculum/](http://salt.uaa.alaska.edu/curriculum/)

### 15. General Education Requirement
- Oral Communication
- Written Communication
- Quantitative Skills
- Fine Arts
- Social Sciences
- Natural Sciences
- Humanities
- Integrative Capstone

### 16. Course Description
An introduction to nonlinear dynamics and chaos. Concrete examples from Physics, Biology, Chemistry and Engineering are used to develop analytical methods and geometric intuition. Topics covered include phase plane analysis, iterated maps, fractals and strange attractors.

### 17a. Course Prerequisite(s)
- Math A202 and [PHYS A124 or PHYS A212], both with minimum grade of C.

### 17b. Test Score(s)

### 17c. Co-requisite(s)
- Concurrent enrollment required

### 17d. Other Restrictions
- [ ] College
- [ ] Major
- [x] Class
- Level

### 17e. Registration Restriction(s)
Completion of GER Tier 1 (basic college-level skills) courses and junior standing.

### 18. Mark if course has fees

### 19. Justification for Action
This is an existing course that is particularly well suited to be an Integrated Capstone GER.

---

### Approved
- [ ] Disapproved:
- **Approved**
- [ ] **Disapproved**:
- **Approved**
- [ ] **Disapproved**:
- **Approved**
- [ ] **Disapproved**:

---

Initiator (faculty only) | Date |
---|---|
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |

Dean/Director of School/College | Date |
---|---|
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |

Undergraduate or Graduate Academic Board Chairperson | Date |
---|---|
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |
[Approved Disapproved] | Date |

Provost or Designee | **Date**
I. Date of Initiation: February 27, 2007

II. Course Information
   A. College: CAS
   Departments: Biology, Chemistry, and Physics and Astronomy
   B. Course Subject: BIOL/CHEM/PHYS
   C. Course Number: A456
   D. Number of Credits/CEU: 3.0
   E. Number of Contact Hours: 3+0
   F. Course Title: Nonlinear Dynamics and Chaos
   G. Grading Basis: A-F
   H. Course Description: An introduction to nonlinear dynamics and chaos. Concrete examples from Physics, Biology, Chemistry and Engineering are used to develop analytical methods and geometric intuition. Topics covered include phase plane analysis, iterated maps, fractals and strange attractors.
   I. Course Prerequisite: Math A202 and [PHYS A124 or PHYS A212], both with minimum grade of C.
   J. Registration Restrictions: Completion of GER Tier 1 (basic college-level skills) courses and junior standing.
   K. Course Attributes: UAA GER Integrative Capstone
   L. Implementation Date: Fall 2007

III. Instructional Goals and Student Outcomes

1. Instructional Goals

The topics usually discussed in science and engineering classes are linear systems, however most real world problems are nonlinear. The analysis of nonlinear dynamical systems is presently one of the most active areas of research. In large part this is because the ongoing improvements in computer power constantly open up new areas where computer analysis may be applied.

The goals of this course are:
1. Students will study models of nonlinear systems in a wide range of fields: physics, biology, chemistry, engineering, and economics.
2. Students will learn and apply techniques for analyzing these models; especially graphical and numerical methods.
3. Students will record data from actual nonlinear systems and then analyze the data using techniques appropriate for complex systems.

2. Student Outcomes.

Upon completion of this course, students will be able to:

1. Create mathematical models of complex dynamical systems.
2. Determine the long term behavior of nonlinear dynamical models.
3. Use computers to find the attractors in physical data from actual nonlinear systems.

IV. Guidelines for Evaluation

Course grade is A-F. The grade will be based on how well the student masters the subject material. This will be evaluated through weekly homework assignments, lab reports, midterm and final exams.

V. Topical Course Outline

1. Overview of Dynamical Systems
2. 1-D Flows in Phase Space
   - Bifurcations
     -- Lab Activity: Cooling
3. Flow in a Circular Phase Space
4. 2-D Linear Dynamics
   -- Lab: Damped Oscillations
5. 2-D Nonlinear Dynamics.
   -- Lab: Synchronization
6. Limit Cycles
7. Quasiperiodicity
   -- Lab: Quasiperiodicity
8. Lorenz Equations
9. 1-D Maps
   -- Lab: Diode Circuits
10. Fractals
11. Strange Attractors
    -- Lab: Paper Crumpling
12. Pattern Formation
VI. Suggested Text


VII. Bibliography


Curriculum Coordination Form

Notification Date: February 9, 2007

Initiating unit: Biology, Chemistry, Physics and Astronomy

Affected unit(s):

Course Prefix and Number: BIOL/CHEM/PHYS A456   Previous Prefix and Number:

Complete Course/Program Title: Nonlinear Dynamics and Chaos

Previous Course/Program Title:

Description of Action: Add existing course to GER Integrated Capstone

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Resource Implication Form

1. School/College CAS

2. Program/Course Biology, Chemistry, Physics and Astronomy

3. Course Prefix BIOL/CHEM/PHYS

4. Course Number A456

5. Implementation Date Fall 2007

6. Type of Action and Category
   - [ ] Course addition
   - [x] Course change
   - [ ] Program addition
   - [ ] Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - [ ] part-time faculty
   - [ ] new full-time faculty
   - [ ] reassignment of full-time faculty
   - [ ] additional class/lab space
   - [ ] modification of class/lab space
   - [ ] additional library resources
   - [ ] additional computer equipment
   - [ ] other costs

8. Explanation: This is an existing course, so no additional resources are needed.

_______ Approved
_______ Disapproved
   Department Chair __________________________ Date __________________________

_______ Approved
_______ Disapproved
   Dean/Director of School/College __________________________ Date __________________________

_______ Approved
_______ Disapproved
   Provost __________________________ Date __________________________
Across this Land: The Historical Geography of North America
North America: Hist Geog
Abbreviated Title for Transcript (30 character)

1a. School or College
   AS  CAS

1b. Division
   AHUM

1c. Department
   Geography

2. Course Prefix
   GEOG

3. Course Number
   A345

4. Previous Course Prefix & Number

5a. Credits/CEU
   3

5b. Contact Hours
   (Lecture + Lab) (3+0)

6. Complete Course/Program Title
   Across this Land: The Historical Geography of North America
   North America: Hist Geog

7. Type of Course
   [ ] Academic
   [ ] Non-credit
   [ ] CEU
   [ ] Professional Development

8. Type of Action
   [ ] Course
   [ ] Program
   [ ] Add
   [ ] Change
   [ ] Delete (mark appropriate boxes)

9. Repeat Status No
   # of Repeats
   Max Credits

10. Grading Basis
    [ ] A-F
    [ ] P/NP
    [ ] NG

11. Implementation Date
    semester/year
    From: Fall/2007
    To: /9999

12. [ ] Cross Listed with HIST A345
    Stacked with
    Cross-Listed Coordination Signature

13. List any programs or college requirements that require this course

14. Coordinate with Affected Units:
    UAA Faculty Listserv
    Department, School, or College

15. General Education Requirement
    [ ] Oral Communication
    [ ] Written Communication
    [ ] Quantitative Skills
    [ ] Humanities
    [ ] Fine Arts
    [ ] Social Sciences
    [ ] Natural Sciences
    [ ] Integrative Capstone

16. Course Description
   Explores the European settlement of North America, the impact of geography on this settlement, and the impress of culture and political process on the land.

17a. Course Prerequisite(s)
    (list prefix and number)

17b. Test Score(s)

17c. Co-requisite(s)
    (concurrent enrollment required)

17d. Other Restriction(s)
    [ ] College
    [ ] Major
    [ ] Class
    [ ] Level

17e. Registration Restriction(s)
    (non-codable)

18. [ ] Mark if course has fees

19. Justification for Action
   GEOG A345 course will no longer be cross-listed with INTL. INTL is deleting the course. The course will remain as GEOG/HIST A 345. Geography has requested this action.

Initiator (faculty only)
Date

Approved
Disapproved:
Dean/Director of School/College
Date

Approved
Disapproved:
Department Chairperson
Date

Approved
Disapproved:
Undergraduate or Graduate
Academic Board Chairperson
Date

Approved
Disapproved:
Curriculum Committee Chairperson
Date

Approved
Disapproved:
Provost or Designee
Date
### Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

#### 1a. School or College

AS CAS

#### 1b. Division

AHUM

#### 1c. Department

History

#### 2. Course Prefix

HIST

#### 3. Course Number

A345

#### 4. Previous Course Prefix & Number

∅

#### 5a. Credits/CEU

3

#### 5b. Contact Hours

(Lecture + Lab) (3+0)

#### 6. Complete Course/Program Title

Across this Land: The Historical Geography of North America

North America: Hist Geog

#### 7. Type of Course

- [ ] Academic
- [ ] Non-credit
- [ ] CEU
- [ ] Professional Development

#### 8. Type of Action

- [X] Add
- [ ] Change
- [ ] Delete

#### 9. Repeat Status No

- [ ] # of Repeats
- [ ] Max Credits

#### 10. Grading Basis

- [X] A-F
- [ ] P/NP
- [ ] NG

#### 11. Implementation Date

- [ ] semester/year

From: Fall/2007

To: /9999

#### 12. Cross Listed with

GEOG A345

- [ ] Stacked

#### 13. List any programs or college requirements that require this course

#### 14. Coordinate with Affected Units:

UAA Faculty Listserv

Department, School, or College

- Initiator Signature
- Date

#### 15. General Education Requirement

- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

#### 16. Course Description

Explores the European settlement of North America, the impact of geography on this settlement, and the impress of culture and political process on the land.

#### 17a. Course Prerequisite(s) (list prefix and number)

#### 17b. Test Score(s)

#### 17c. Co-requisite(s) (concurrent enrollment required)

#### 17d. Other Restriction(s)

- College
- Major
- Class
- Level

#### 17e. Registration Restriction(s) (non-codable)

#### 18. Mark if course has fees

#### 19. Justification for Action

The HIST A345 course will no longer be cross-listed with INTL. INTL is deleting the course. The course will remain as GEOG/HIST A 345. Geography has requested this action.

---

Approved

Disapproved:

Initiator (faculty only) Date

Approved

Disapproved:

Dean/Director of School/College Date

Approved

Disapproved:

Department Chairperson Date

Approved

Disapproved:

Undergraduate or Graduate Date

Approved

Disapproved:

Academic Board Chairperson Date

Approved

Disapproved:

Provost or Designee Date
**Curriculum Action Request**  
**University of Alaska Anchorage**  
**Proposal to Initiate, Add, Change, or Delete a Course or Program of Study**

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<tbody>
<tr>
<td>AS CAS</td>
<td>AHUM Division of Humanities</td>
<td>International Studies</td>
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<table>
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<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
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<th>5b. Contact Hours (Lecture + Lab)</th>
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<tbody>
<tr>
<td>INTL</td>
<td>A335</td>
<td>INTL A301</td>
<td>3.0</td>
<td>(3+0)</td>
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<tr>
<th>6. Complete Course/Program Title</th>
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<tr>
<td>Canada: Nation and Identity</td>
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</table>

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<th>7. Type of Course</th>
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<th>CEU</th>
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<th>10. Grading Basis</th>
<th>11. Implementation Date</th>
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<td>Change</td>
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<th>12. Cross Listed with</th>
<th>13. List any programs or college requirements that require this course</th>
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<td>BA in International Studies: Canada Track and Canadian Studies Minor</td>
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<th>14. Coordinate with Affected Units:</th>
<th>Faculty Listserv</th>
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<td>Department, School, or College</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>15. General Education Requirement</th>
<th>16. Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>An interdisciplinary examination and analysis of Canada. Themes include the development of Canadian nationalism and national identity, problems of official bilingualism, Quebec separatism, Multiculturalism and Canadian First Nations. American political and cultural relations will be explored as issues framing the future of Canada and its international role in the 21st century. Fulfills GER Integrative Capstone Requirement.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>17a. Course Prerequisite(s) (list prefix and number)</th>
<th>17b. Test Score(s)</th>
<th>17c. Co-requisite(s) (concurrent enrollment required)</th>
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</thead>
<tbody>
<tr>
<td>GEOG A101 or INTL A101 and HIST A131</td>
<td>None</td>
<td>None</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>17d. Other Restriction(s)</th>
<th>17e. Registration Restriction(s) (non-codable)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completion of GER Tier 1 (basic college-level skills) courses and junior standing</td>
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<thead>
<tr>
<th>18. Mark if course has fees</th>
<th>19. Justification for Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INTL is removing INTL A301 from the GER Social Science list, revising the CCG to reflect the current curriculum and methods, and proposing the course as a GER capstone. The course is interdisciplinary and integrative by design. It requires students to demonstrate excellent communication skills, critical and analytical thinking, and the responsible and critical use of sources.</td>
</tr>
</tbody>
</table>

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Initiator (faculty only)  
Date  
Approved:  
Disapproved:  

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

Department Chairperson  
Date  
Approved:  
Disapproved:  

Undergraduate or Graduate  
Academic Board Chairperson  
Date  
Approved:  
Disapproved:  

Curriculum Committee Chairperson  
Date  
Approved:  
Disapproved:  

Provost or Designee  
Date  
Approved:  
Disapproved:  

89
INTL A335
Course Content Guide

Date:  20 March, 2007

I. Course Information

a. College:  College of Arts and Sciences
b. Prefix:  INTL
c. Number:  A335
d. Credits:  3 credits, 45 contact hours
e. Course Title:  Canada: Nation and Identity
f. Grading Basis:  A-F
g. Prerequisites:  GEOG A101 or INTL A101 and HIST A131
h. Course Attributes: Fulfills GER Integrative Capstone Requirement
i. Restrictions:  Completion of GER Tier 1 (basic college-level skills courses) and junior standing
j. Fees:  No lab fees
k. Course Description:

An interdisciplinary examination and analysis of Canada. Themes include the development of Canadian nationalism and national identity, problems of official bilingualism, Quebec separatism, Multiculturalism and Canadian First Nations. American political and cultural relations will be explored as issues framing the future of Canada and its international role in the 21st century. Fulfills GER Integrative Capstone Requirement.

II. Instructional Goals and Student Outcomes

A. Instructional Goals. The instructor will:

Provide a Platform for Knowledge Integration:  By the very nature of the course students will be exposed to a variety of disciplines and their approaches. Synthesizing these materials is necessary to gain understanding of contemporary Canada and for envisioning its future. Students will have the opportunity to hear visiting speakers from a variety of disciplines, as well as speakers from the community and from organizations such as the Canadian Consulate. Students are required from the beginning of the course to integrate disciplines, both in their individual assignments and in group activities.

Facilitate Effective Communication:  Students will demonstrate their success in mastering and synthesizing the various materials through written and oral presentation.
Encourage Critical Thinking: The thematic approach of the course requires students to think across disciplines in order to analyze a particular theme or issue. Students will be introduced to the intellectual standards and associated questions specific to each discipline, and they will be required to apply these in the analysis of and reasoning about the particular themes and issues of the course (Canadian nationalism and national identity, problems of official bilingualism and Quebec separatism, Multiculturalism and Canadian First Nations, and American political and cultural relations as they affect Canada).

Stress Information Literacy: The course will pay particular attention to the use of primary and secondary sources: how to access them, how to evaluate them critically, and how to incorporate them into analytical thinking about the issues. The nature of the themes of the course is such that critical use of sources (whether electronic information, printed material, the visual arts or performance) is imperative for an informed opinion rather than an emotional reaction.

B. Student Outcomes: Students who successfully complete this course will:

| Demonstrate integration of knowledge across disciplines related to the key themes and theses in contemporary Canadian society and culture and the differences between Canadian and American society. | Analytical Mid-term and Final Examinations |
| Construct arguments (both written and oral) that analyze the development of Canadian nationalism and national identity in broader historical and social contexts. | Analytical Midterm and Final Examinations; Document Analysis; Individual and/or Group Presentation/s; Group Discussions |
| Demonstrate the ability to think critically about Canada: to review key Canadian current issues and to link those issues to basic knowledge of Canada and to develop a sense of Canada’s place in the world and future given its uncertain standing as a nation-state. | Analytical Midterm and Final Examinations; Document Analysis |
| Demonstrate the responsible, legal, and ethical use of information through the gathering, evaluation, and critical analysis of key Canadian texts, documents and cultural products. | Individual and/or Group Presentation/s; Document Analysis |

III. Guidelines for Evaluation

Students in INTL 301 will be assessed using four major devices.
• A mid-term examination using short answer questions will assess students’ knowledge of Canadian history, geography and politics, specifically assessing students’ ability to integrate this knowledge to detect the key themes and theses in Canadian geography, history and politics.

• A document analysis which may include a book (fiction or non-fiction) review, short research paper and critical analysis of a historical document or a film review will assess students’ ability to critically interpret a document and relate that document to the issues raised in class. This assessment will also give the students the opportunity to apply a developing disciplinary expertise (history, literature, art, etc.) to course content.

• A final exam using longer essays will assess students’ knowledge of the key focus of the course – Canadian national identity and the historical and social issues that make it intelligible. This exam will require students to integrate knowledge from the first portion of the course, the section focused on nationalism, identity and current issues with previously acquired distribution knowledge.

• Individual and/or Group Presentation/s. The topic will vary.

• Other assignments might include projects on Canadian current issues, book analyses or reviews, essays on guest lectures.

IV. Course Level Justification

This course will ask students to integrate a diverse set of disciplinary bodies of knowledge (geography, history, politics, anthropology, language, literature, film and cultural studies) to analyze the problem of Canadian nationalism and identity, thus it is an upper-division course offered at the 300-level.

V. Topic Course Outline

1. Introduction to Course and Canada
2. Themes in Canadian Geography
3. Contact to Conquest
4. British North America and the First American Civil War
5. Forging a New Nation
6. Historic Challenges to National Identity and the Quiet Revolution
7. The Canadian Regime
8. Modern Canada and Crisis
9. Canadian Geography and Regionalism
10. Nationalism and Canadian National Identity
11. Nationalism and Literature
12. Multiculturalism and other social policies
13. First Nations
14. Canadian Culture and Film
15. Canada in the World
16. Canada’s Future
VI. Suggested Texts


In addition to the basic text, instructors should assign a recent monograph dealing with the issue of Canadian national identity to be discussed throughout the course and a contemporary Canadian novel to be discussed in class during the literature portion of the course. Novels dealing with the historical problems of Canadian national identity and multiculturalism have proven effective (e.g. No Great Mischief, Obasan, Two Solitudes, The Whirlpool)

This class also requires the selection of a Canadian film to be shown in class and discussed. Films dealing with issues of culture and cultural conflict in Canada have proven effective (e.g. Jesus of Montreal, Margaret’s Museum, Just Watch Me, The Barbarian Invasions)

VII. Bibliography


Library Resource Form

Excerpts from the Northwest Association of Schools and Colleges Accreditation Handbook 1999 Edition

Standard Five - Library And Information Resources
Standard 5.A - Purpose and Scope
The primary purpose for library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution's mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

Standard Two - Educational Program And Its Effectiveness
Standard 2.A. - General Requirements
2.A.8 Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.

Program/Course Title: INTL A335 Canada: Nation and Identity

1. Please identify the library liaison consulted in preparation of this proposal.
   Name: Judith Green

   To see who your library liaison is at:
   UAA go to: http://www.lib.ualaska.edu/webgroup/liaison.php3
   Kenai Peninsula College go to: http://www.uaa.alaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
   Kodiak College go to: http://www.koc.alaska.edu/library/default.html
   Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.
   a. International Studies will continue to work with the Consortium Library to update the Canada collection.

______________________________________________________________________________
Initiator signature
Curriculum Coordination Form

Notification Date: February 19, 2007
Initiating unit: International Studies
Affected unit(s): International Studies
Course Prefix and Number: INTL A335   Previous Prefix and Number: INTL A301
Complete Course/Program Title: Canada: Nation and Identity
Previous Course/Program Title: Canada: Introductory Survey

Description of Action: Course Revision

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Resource Implication Form

1. School/College CAS

2. Program/Course International Studies

3. Course Prefix INTL

4. Course Number A355

5. Implementation Date F07

6. Type of Action and Category
   - [ ] Course addition
   - [x] Course change
   - [ ] Program addition
   - [ ] Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - [ ] part-time faculty
   - [ ] new full-time faculty
   - [ ] reassignment of full-time faculty
   - [ ] additional class/lab space
   - [ ] modification of class/lab space
   - [ ] additional library resources
   - [ ] additional computer equipment
   - [ ] other costs

8. Explanation: One section of the course is currently being offered every spring semester. The revised course will be continued on this rotation. There are no new costs associated with the revision of this course.
Curriculum Action Request  
University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

1a. School or College  
CB CBPP  
1b. Division  
ADBP  
1c. Department  
Computer Information Systems

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

6. Complete Course/Program Title  
Managing Data Communications and Computer Networks  
Data Communications & Networks  
Abbreviated Title for Transcript (30 character)

7. Type of Course  
Academic  
Non-credit  
CEU  
Professional Development

8. Type of Action  
Add  
Change  
Delete

9. Repeat Status No  
# of Repeats  
Max Credits

10. Grading Basis  
A-F  
P/NP  
NG

11. Implementation Date  
semester/year  
From: Fall/2007  
To: 9999

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

13. List any programs or college requirements that require this course  
Bachelor of Business Administration (BBA) in Management Information Systems (MIS); Associate of Applied Science (AAS) in Business Computer Information Systems (BCIS); Minor in MIS

14. Coordinate with Affected Units:  
CBPP, Listserve Department, School, or College

15. General Education Requirement  
Oral Communication  
Written Communication  
Quantitative Skills  
Humanities  
Fine Arts  
Social Sciences  
Natural Sciences  
Integrative Capstone

16. 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.

17a. Course Prerequisite(s) (list prefix and number)  
CIS A185  
17b. Test Score(s)  
N/A  
17c. Co-requisite(s) (concurrent enrollment required)  
N/A

17d. Other Restriction(s)  
College  
Major  
Class  
Level  
17e. Registration Restriction(s) (non-codable)  
College of Business & Public Policy majors must be admitted to upper-division standing

18. Mark if course has fees standard CBPP lab fees

19. Justification for Action  
Change of prerequisite and revised as part of the CBPP standard Five-Year Curriculum Review Program

---

Initiator (faculty only)  
Date

Approved  
Disapproved:  
Dean/Director of School/College  
Date

Approved  
Disapproved:  
Department Chairperson  
Date

Approved  
Disapproved:  
Undergraduate or Graduate  
Academic Board Chairperson  
Date

Approved  
Disapproved:  
Curriculum Committee Chairperson  
Date

Approved  
Disapproved:  
Provost or Designee  
Date
COURSE CONTENT GUIDE  
UNIVERSITY OF ALASKA ANCHORAGE  
COLLEGE OF BUSINESS AND PUBLIC POLICY

I. Date Initiated  
April 11, 2007

II. Course Information  
   College/School: College of Business and Public Policy  
   Department: Computer Information Systems  
   Program: Bachelor of Business Administration (BBA) in Management Information Systems (MIS); Associate of Applied Science (AAS) in Business Computer Information Systems (BCIS); Minor in MIS  
   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 A185  
   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  
   D. Exams and quizzes

IV. Guidelines for Evaluation  
   A. Exams and quizzes  
   B. Lab assignments  
   C. Oral presentation  
   D. Research paper  
   E. Project
V. Course Level Justification
This is an upper-division class that analyzes a wide range of data communications notions. The lectures show highly technical diagrams which highlight the interactions among communications devices, communications systems and telecommunications professionals. Students are expected to be familiar with computer use, including operating systems and computer programming, and are expected to integrate this knowledge to understand how the computers exchange data.

VI. Outline
A. Historical Perspective on Communications, Information Systems and Data Networks
B. TCP/IP Layer Model
   1. Application layer
   2. Physical layer
   3. Datalink layer
   4. Network and transport layers
C. Local Area Networks
   1. Wired LANs
   2. Wireless LANs
D. Backbone Networks
E. Metropolitan Networks
F. Wide Area Networks
G. The Internet
H. Network Security
I. Network Design
J. Network Management

VII. Suggested Text

VIII. Bibliography
IX. Instructional Goals and Student Outcomes

A. Instructional Goals.  
The instructor will:

1. Present technical requirements of telecommunications networks and justify them based on business requirements. Present an analysis of the business implications of each technical concept.

2. Describe communications protocols focusing on the role of standards and on the role of 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 type including both wired and wireless technologies.

5. Present the need and the means for securing access to networks.

6. Discuss means and implications of network design and management.

7. Engage students in exploring emerging topics and in understanding both business implications and technological ones.

B. Student Outcomes.  
Students will be able to:  

<table>
<thead>
<tr>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam</td>
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<tr>
<td>Quizzes</td>
</tr>
<tr>
<td>Lab assignments</td>
</tr>
</tbody>
</table>

1. Evaluate technical requirements of telecommunications networks and be able to justify them based on business requirements.

2. Identify the need for communications protocols and identify standards and network layers where the protocols operate. Be able to install and configure protocols.
<p>| | |</p>
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<tr>
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<tbody>
<tr>
<td>3.</td>
<td>Explain why and where analog and digital formats are used in existing communications systems.</td>
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<td></td>
<td>Exams</td>
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<td></td>
<td>Quizzes</td>
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<tr>
<td>4.</td>
<td>Describe the architecture and the protocols supporting data networks of local through wide area type including both wired and wireless technologies. Be able to install, configure, and debug a small local area network.</td>
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<tr>
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<td>Exams</td>
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<td></td>
<td>Quizzes</td>
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<tr>
<td></td>
<td>Lab assignments</td>
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<tr>
<td>5.</td>
<td>Identify the security needs of an organization and suggest the means for securing access to networks.</td>
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<td></td>
<td>Exams</td>
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<td>Quizzes</td>
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<td>6.</td>
<td>Design a small local area network and be able to justify the architectural and technology choices.</td>
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<td>Exams</td>
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<td>Quizzes</td>
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<td>7.</td>
<td>Research an emerging topic, write a report documenting the research, and present the results to the class.</td>
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<td>Research paper</td>
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<td>Oral presentation</td>
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# Curriculum Action Request

**University of Alaska Anchorage**

Proposal to Initiate, Add, Change, or Delete a Course or Program of Study

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<tbody>
<tr>
<td>AS CAS</td>
<td>AMSC Division of Math Science</td>
<td>Biological Sciences</td>
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<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEU</th>
<th>5b. Contact Hours</th>
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<tbody>
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<td>BIOL</td>
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<td></td>
<td>3</td>
<td>(Lecture + Lab)</td>
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<tbody>
<tr>
<td>Introductory Biology</td>
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<th>7. Type of Course</th>
<th>8. Type of Action</th>
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<th>9. Repeat Status</th>
<th>10. Grading Basis</th>
<th>11. Implementation Date</th>
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<td>From: FALL/2007</td>
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<td>Oral Communication</td>
<td>Written Communication</td>
<td>Quantitative Skills</td>
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<td>Natural Sciences</td>
<td>Integrative Capstone</td>
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- Selected introductory biological concepts including the chemical basis of life, cell structure, energetics, physiology, genetics, biotechnology, evolution, ecology and scientific methodology. This course will provide the non-biologist with a working knowledge of life science that will be useful in making informed decisions on health and the environment. Special Note: Primarily for non-science majors. Satisfies UAA general education and CAS Natural Science degree requirements.

### Course Description

- **Course Prerequisite(s)** (list prefix and number)
- **Test Score(s)**
- **Co-requisite(s)** (concurrent enrollment required)
- **Other Restriction(s)**
  - College
  - Major
  - Class
  - Level
- **Registration Restriction(s)** (non-codable)

19. Justification for Action

- Course content has been revised and up-dated

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**Initiator (faculty only)**

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**Dean/Director of School/College**

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**Department Chairperson**

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**Undergraduate or Graduate Academic Board Chairperson**

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**Curriculum Committee Chairperson**

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**Provost or Designee**

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<td>Date</td>
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</table>

**Date**

104
I. Initiation Date: 6 March 2007

II. Course Information:
   A. College: College of Arts and Sciences
   B. Course Subject/Number: BIOL A102
   C. Credits and Contact Hours: 3.0 credits, 3+0 Contact Hours
   D. Course Title: Introductory Biology
   E. Grading basis: A-F

F. Course Description: Selected introductory biological concepts including the chemical basis of life, cell structure, energetics, physiology, genetics, biotechnology, evolution, ecology and scientific methodology. This course will provide the non-biologist with a working knowledge of life science that will be useful in making informed decisions on health and the environment. Special Note: Primarily for non-science majors. Satisfies UAA general education and CAS Natural Science degree requirements.

G. Status of course relative to a degree or certificate program: None

H. Course Attributes: UAA GER Natural Sciences requirement
I. Prerequisites: None
J. Registration Restriction: None
K. Course fees: None

III. Course Activities:

Course conducted principally as lecture with classroom discussions.

IV. Course Evaluation:

Course grading is A-F. Students will be evaluated through a series of quizzes, homework assignments and examinations.

V. Instructional Goals and Student Outcomes:

A. The instructor will:
   • Introduce students to terminology and concepts that are used to describe living systems.
   • Explain the process, application and limitations of the scientific method in formulating questions about biological processes and systems.
   • Explain selected aspects of the interrelatedness and interdependence of living systems from the sub-cellular to the global ecosystem levels.
   • Describe selected facts and important processes in biology including, but not limited to the chemical basis of life, cell structure, energetics, physiology, genetics, biotechnology, evolution and ecology.
   • Describe how various modern innovations advertised to improve quality of living organisms may actually interfere with or negatively impact their health.
   • Explain how evolution is the common thread that unifies all of biology.
B. Student Outcomes:

<table>
<thead>
<tr>
<th>Students will be able to:</th>
<th>Assessment method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply the scientific method through formulating hypotheses, proposing testable predictions, and then testing to reach supportable conclusions <strong>about biological processes and systems</strong></td>
<td>Written exams, homework and clickers</td>
</tr>
<tr>
<td>Demonstrate an understanding of the fundamentals of the biology of cells, organisms, and living systems</td>
<td>Written exams, homework and clickers</td>
</tr>
<tr>
<td>Demonstrate a knowledge of the major discoveries and advances in biology that have impacted thought and technology throughout history.</td>
<td>Written exams, homework and clickers</td>
</tr>
<tr>
<td>Identify ways in which biology has advanced the understanding of important natural processes.</td>
<td>Written exams, homework and clickers</td>
</tr>
</tbody>
</table>

VI. Course Level Justification:

The exercises and content course of this course are designed for introductory level students with little or no background in biology and science. It is intended to promote a student’s appreciation for the complexity of life and to enable them to make informed decisions on health and the environment.

VII. Typical Course Outline

1. The Nature of Science and Biology
   1.1. What is science?                                                                                                                                                |
   1.2. The scientific method                                                                                                                                         |
   1.3. The nature of biology                                                                                                                                           |
   1.4. How does science impact our everyday world?                                                                                                                   |

2. Water and pH
   2.1. Importance of water to life                                                                                                                                     |
   2.2. Acids, bases, buffers                                                                                                                                         |
   2.3. Homeostasis                                                                                                                                                      |

3. Biological Macromolecules
   3.1. Carbon                                                                                                                                                           |
   3.2. Carbohydrates                                                                                                                                                   |
   3.3. Lipids                                                                                                                                                           |
   3.4. Proteins                                                                                                                                                         |
   3.5. Nucleic acids                                                                                                                                                   |

4. Populations and Communities
   4.1. What is Ecology                                                                                                                                                 |
   4.2. Populations and population dynamics                                                                                                                           |
   4.3. Survivorship strategies and human populations                                                                                                                 |

5. Ecosystems and the Biosphere
   5.1. Living and non-living factors                                                                                                                                  |
   5.2. Hierarchical levels of organization                                                                                                                             |
   5.3. Greenhouse effect                                                                                                                                               |
5.4. Global warming? Is it real?

6. Nutrient Recycling
   6.1. Carbon
   6.2. Nitrogen
   6.3. Water

7. Energy and Energy Flow
   7.1. Producers, consumers and trophic levels
   7.2. Tracking energy through ecosystems

8. Cell Structure
   8.1. Prokaryotes and eukaryotes
   8.2. Cells are the functional units of life
   8.3. The eukaryotic cell: structure and functions
   8.4. How do plant cells differ from animal cells?

9. Cell Division
   9.1. Mitosis: how somatic cells divide
   9.2. Meiosis: how reproductive cells divide

10. Cellular Energy for Metabolism
   10.1. What is energy?
   10.2. Laws of thermodynamics
   10.3. ATP
   10.4. Kinetic versus potential energy in living systems
   10.5. Energy of activation: what is it?
   10.6. Enzymes

11. Energetics
   11.1. Cellular Respiration
      11.1.1. Glycolysis
      11.1.2. Krebs Cycle
      11.1.3. Electron transport and mitochondria
      11.1.4. Food conversion and ATP
   11.2. Photosynthesis
      11.2.1. Components of photosynthesis
      11.2.2. Light-dependent reaction
      11.2.3. Light-independent reaction

12. Genetics
   12.1. Mendel and pea plants
   12.2. Genetic dominance and recessiveness
   12.3. Mendel’s laws: what they mean to you
   12.4. Incomplete dominance
   12.5. Co-dominance

13. DNA
   13.1. The nature of DNA
   13.2. What are genes?
   13.3. The double helix
   13.4. Mutations
   13.5. When cells have incorrect numbers of chromosomes

14. How Proteins are Made
14.1. The structure of proteins
14.2. Overview of protein synthesis
14.3. Transcription of the genetic code
14.4. Translation of genetic code

15. Biotechnology
15.1. Biotechnology defined
15.2. Dolly and Polly the sheep
15.3. Transgenic biotechnology
15.4. Reproductive cloning
15.5. Forensic biotechnology
15.6. The future is now: genetically modified foods, stem cells, cloning and genetic profiling!

16. Evolution
16.1. Evidence for Evolution
16.2. Is "Intelligent Design” or Creation testable using the scientific method?
16.3. Darwin’s ideas
16.4. Descent with Modification
16.5. Natural Selection

17. Microevolution
17.1. Populations evolve, individuals don’t
17.2. Allelic frequencies and the definition of evolution
17.3. Five agents of microevolution
17.4. Evolutionary fitness
17.5. Modes of natural selection

18. Macroevolution
18.1. What is a species?
18.2. Biological species definition
18.3. How and where do new species arise?
18.4. The pace and tempo of evolution

19. Physiology, homeostasis and organ systems
19.1. How does the body regulate itself?
19.2. The four basic tissue types
19.3. Organs and organ systems
19.4. The skin is the body’s largest organ
19.5. The skeletal system
19.6. The muscular system

20. Nervous System
20.1. Structure of the nervous system
20.2. Cells of the nervous system
20.3. How nerve cells communicate

21. Endocrine System
21.1. Structure and organization of the endocrine system
21.2. How are hormone secretions controlled?
21.3. How do the endocrine and nervous systems compare?

22. Immune system
22.1. Nonspecific and specific immunity
22.2. Antibody-mediated immunity
22.3. Cell-mediated immunity
22.4. Viruses and the immune system
22.5. HIV-AIDS, HPV, herpes and other viruses

23. Reproductive System
23.1. Overview of reproduction and development
23.2. Female reproductive system
23.3. Male reproductive system
23.4. The fertilization reaction
23.5. Early development
23.6. How and why do birth control pills, plan B and morning after pills work?
23.7. What can possibly go wrong?

VIII. Suggested Texts


IX. Bibliography


Curriculum Coordination Form

Notification Date: 6 March 2007

Initiating unit: BIOLOGY

Affected unit(s):

Course Prefix and Number: BIOL A102, BIOL A103, BIOL A111, BIOL A112

Previous Prefix and Number: BIOL A102, BIOL A103, BIOL A111, BIOL A112

Complete Course/Program Title: Introductory Biology, Introductory Biology Lab, Human Anatomy and Physiology I, Human Anatomy and Physiology II

Previous Course/Program Title: Introductory Biology, Introductory Biology Lab, Human Anatomy and Physiology I, Human Anatomy and Physiology II

Description of Action: BIOL A102: Selected introductory biological concepts including the chemical basis of life, cell structure, energetics, physiology, genetics, biotechnology, evolution, ecology and scientific methodology. This course will provide the non-biologist with a working knowledge of life science that will be useful in making informed decisions on health and the environment. Special Note: Primarily for non-science majors. Satisfies UAA general education and CAS Natural Science degree requirements.

BIOL A103: Selected introductory biological concepts including the chemical basis of life, cell structure, energetics, physiology, genetics, biotechnology, evolution, ecology and scientific methodology. This course will provide the non-biologist with a working knowledge of life science that will be useful in making informed decisions on health and the environment. Laboratory supplement of BIOL A102. Exercises are designed to illustrate principles and concepts developed in BIOL A102. Special Note: Primarily for non-science majors. Satisfies UAA general education and CAS Natural Science degree requirements.

BIOL A111: An introduction to human structure and function. The integumentary, skeletal, muscular, nervous and endocrine systems are considered. Special Note: Accepted for biology major credit only by petition. Satisfies UAA general education and CAS natural science degree requirements for specified baccalaureate degree programs. One 3-hour lab per week.

BIOL A112: A continuation of BIOL 111. The circulatory, lymphatic, immune, respiratory, digestive, urinary and reproductive systems are considered. Special Note: Accepted for biology major credit only by petition. Satisfies UAA general education and CAS natural
science degree requirements for specified baccalaureate degree programs. One 3-hour lab per week.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
The Biology Department is updating CARs and CCGs for the following GER courses: Biology A102, A103, A111 and A112, which needed to be updated for accreditation purposes.

I stand ready to provide you with any additional information that you may require.

__________________________

Jerry D. Kudenov
Dept. Biological Sciences
University Alaska Anchorage
3211 Providence Drive
Anchorage, Alaska 99508 USA

afjdk@uaa.alaska.edu
907-786-1769 office
907-786-4607 fax
## Curriculum Action Request

**University of Alaska Anchorage**

**Proposal to Initiate, Add, Change, or Delete a Course or Program of Study**

<table>
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<th>1a. School or College</th>
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<th>2. Course Prefix</th>
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<th>5a. Credits/CEU</th>
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<td>Introductory Biology Laboratory</td>
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<td>☑ A-F</td>
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<tr>
<td>☐ P/NP</td>
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<th>12. Cross Listed with</th>
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| 13. List any programs or college requirements that require this course |

<table>
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<tr>
<th>14. Coordinate with Affected Units:</th>
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<tbody>
<tr>
<td>Faculty List Serve, Deans &amp; Directors UAA, Mat-Su College, KPC, Kodiak College, &amp; PWSCC</td>
</tr>
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<table>
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<tr>
<th>15. General Education Requirement</th>
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<tr>
<td>☑ Oral Communication</td>
</tr>
<tr>
<td>☑ Written Communication</td>
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<tr>
<td>☑ Quantitative Skills</td>
</tr>
<tr>
<td>☑ Humanities</td>
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<tr>
<td>☑ Fine Arts</td>
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<tr>
<td>☑ Social Sciences</td>
</tr>
<tr>
<td>☑ Natural Sciences</td>
</tr>
<tr>
<td>☑ Integrative Capstone</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected introductory biological concepts including the chemical basis of life, cell structure, energetics, physiology, genetics, biotechnology, evolution, ecology and scientific methodology. This course will provide the non-biologist with a working knowledge of life science that will be useful in making informed decisions on health and the environment. Laboratory supplement of BIOL A102. Exercises are designed to illustrate principles and concepts developed in BIOL A102. Special Note: Primarily for non-science majors. Satisfies UAA general education and CAS Natural Science degree requirements.</td>
</tr>
</tbody>
</table>

| 17a. Course Prerequisite(s) (list prefix and number) |
| BIOL A102 or concurrent enrollment |

| 17b. Test Score(s) |

| 17c. Co-requisite(s) (concurrent enrollment required) |

<table>
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<tr>
<th>17d. Other Restriction(s)</th>
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<tbody>
<tr>
<td>☐ College</td>
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<tr>
<td>☐ Major</td>
</tr>
<tr>
<td>☐ Level</td>
</tr>
</tbody>
</table>

| 17e. Registration Restriction(s) (non-codable) |

| 18. Mark if course has fees |

| 19. Justification for Action |
| Course content has been revised and up-dated |

| 20. Initiator (faculty only) |
| Date |

| 21. Dean/Director of School/College |
| Date |

| 22. Department Chairperson |
| Date |

| 23. Undergraduate or Graduate |
| Academic Board Chairperson |
| Date |

| 24. Provost or Designee |
| 113 Date |

Course Content Guide
University of Alaska Anchorage

BIOL A103
Introductory Biology Laboratory

I. Initiation Date: 6 March 2007

II. Course Information:
A. College: College of Arts and Sciences
B. Course Subject/Number: BIOL A103
C. Credits and Contact Hours: 1.0 credit, 0+3 Contact Hours
D. Course Title: Introductory Biology Laboratory
E. Grading basis: A-F

F. Course Description: Selected introductory biological concepts including the chemical basis of life, cell structure, energetics, physiology, genetics, biotechnology, evolution, ecology and scientific methodology. This course will provide the non-biologist with a working knowledge of life science that will be useful in making informed decisions on health and the environment. Laboratory supplement of BIOL A102. Exercises are designed to illustrate principles and concepts developed in BIOL A102. Special Note: Primarily for non-science majors. Satisfies UAA general education and CAS Natural Science degree requirements.

G. Status of course relative to a degree or certificate program: None

H. Course Attributes: UAA GER Natural Sciences requirement
I. Prerequisites: BIOL A102 or concurrent enrollment
J. Registration Restriction: None
K. Course fees: Yes

III. Course Activities:

Course conducted principally as a laboratory.

IV. Course Evaluation:

Course grading is A-F. Approximately 40% of the evaluation will be based on written tests, 40% on weekly assignments and lab summaries, and approximately 20% on presentation and a written report of a controlled study.

V. Instructional Goals and Student Outcomes:
A. The instructor will:
   • Introduce students to terminology and concepts that are used to describe living systems.
   • Explain the process, application and limitations of the scientific method in formulating questions about biological processes and systems.
   • Explain selected aspects of the interrelatedness and interdependence of living systems from the sub-cellular to the global ecosystem levels.
   • Describe selected facts and important processes in biology including, but not limited to, the chemical basis of life, cell structure, energetics, physiology, genetics, biotechnology, evolution and ecology.
   • Describe how various modern innovations advertised to improve quality of living organisms may actually interfere with or negatively impact their health.
   • Explain how evolution is the common thread that unifies all of biology.
B. Student Outcomes:

<table>
<thead>
<tr>
<th>Students will be able to:</th>
<th>Assessment method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply the scientific method through formulating hypotheses, proposing testable predictions, and then testing to reach supportable conclusions about biological processes and systems</td>
<td>Written exams, homework and lab book</td>
</tr>
<tr>
<td>Demonstrate an understanding of the fundamentals of the biology of cells, organisms, and living systems</td>
<td>Written exams, homework and lab book</td>
</tr>
<tr>
<td>Demonstrate a knowledge of the major discoveries and advances in biology that have impacted thought and technology throughout history.</td>
<td>Written exams, homework and lab book</td>
</tr>
<tr>
<td>Identify ways in which biology has advanced the understanding of important natural processes.</td>
<td>Written exams, homework and lab book</td>
</tr>
<tr>
<td>Demonstrate the ability to work with the tools and in the settings used to collect biological data.</td>
<td>Written exams, homework lab book, paper</td>
</tr>
<tr>
<td>Critically observe biological events or processes and accurately record and analyze observations</td>
<td>Written exams, homework and lab book</td>
</tr>
</tbody>
</table>

VI. Course Level Justification:

The exercises and content course of this course are designed for introductory level students with little or no background in biology and science. It is intended to promote a student’s appreciation for the complexity of life and to enable them to make informed decisions on health and the environment.

VII. Typical Course Outline

1.0 Use of the light microscope
   1.1. Compound microscope
   1.2. Stereoscope microscope
   1.3. Making wet mount slides
   1.4. Laboratory use of the metric system

2.0 The scientific method
   2.1 Hypothesis
   2.2 Experimental design
   2.3 Analysis of a simple ecosystem
      2.3.1 Includes ecosystem energetics
      2.3.2 Includes effects of a variable
   2.4 Preparing a lab report and presentation

3.0 Cell structure and function
   3.1 Cell organelles
   3.2 Animal versus plant cells
   3.3 Concept of osmosis
   3.4 Homeostasis

4.0 Cell cycles
   4.1 DNA extraction
   4.2 Mitosis
   4.3 Meiosis
   4.4 Structural and functional differences
5.0 Genetics
   5.1 Intro to Mendelian genetics
   5.2 Intro to human genetics
   5.3 Blood types
      5.3.1 Genetic basis
      5.3.2 Antibody response

6.0 Natural Selection
   6.1 Predator prey relationships

7.0 Evolution
   7.1 Evidence of evolution
      7.1.1 The fossil evidence
      7.1.2 Evidence from diversity of form and function
   7.2 Microevolution

8.0 The Bacteria, Protista, and Fungi & Diversity
   8.1 Characteristics of Bacteria
   8.2 The ecology of Bacteria
   8.3 Characteristics of Protista
   8.4 The ecology of Protista
   8.5 Characteristics of fungi
   8.6 The ecology of fungi

9.0 Plant Diversity
   9.1 Intro to non-seed plants
   9.2 Intro to seed plants
   9.3 Morphological and ecological comparisons

10.0 Animal Diversity
   10.1 Characteristics of primitive invertebrates
   10.2 Animal systems
   10.3 Morphological and ecological comparison

VIII. Suggested Texts


IX. Bibliography


<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS CAS</td>
<td>AMSC Division of Math Science</td>
<td>Biological Sciences</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEU</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
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<tr>
<td>BIOL</td>
<td>A111</td>
<td></td>
<td>4</td>
<td>(3+3)</td>
</tr>
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6. Complete Course/Program Title
Human Anatomy and Physiology I
Abbreviated Title for Transcript (30 character)

7. Type of Course
- Academic
- Non-credit
- CEU
- Professional Development

8. Type of Action
- Course
- Program
- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Other Restrictions
- Class
- Level
- College
- Major
- Other course content up-dated

9. Repeat Status No

10. Grading Basis
- A-F
- P/NP
- NG

11. Implementation Date
From: Fall/2007
To: 9999/9999

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

13. List any programs or college requirements that require this course
Nursing Programs, Dental Hygiene, Radiologic Technology, Medical Technology

14. Coordinate with Affected Units:
Faculty List Serve, Nursing, Dental Hygiene, Radiologic Technology, Medical Technology
Department, School, or College
Initiator Signature
Date

15. General Education Requirement
- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

16. Course Description
An introduction to human structure and function. The integumentary, skeletal, muscular, nervous and endocrine systems are considered. Special Note: Accepted for biology major credit only by petition. Satisfies UAA general education and CAS natural science degree requirements for specified baccalaureate degree programs. One 3-hour lab per week.

17a. Course Prerequisite(s) (list prefix and number)
17b. Test Score(s)
17c. Co-requisite(s) (concurrent enrollment required)
   BIOL A111L

17d. Other Restriction(s)
- College
- Major
- Class
- Level

17e. Registration Restriction(s) (non-codable)

18. Mark if course has fees

19. Justification for Action
Course content has been revised and up-dated

---

Initiator (faculty only)
Date

Approved
Disapproved:
Dean/Director of School/College
Date

Approved
Disapproved:
Department Chairperson
Date

Approved
Disapproved:
Undergraduate or Graduate
Academic Board Chairperson
Date

Approved
Disapproved:
Provost or Designee
Date

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Course Content Guide
University of Alaska Anchorage

BIOL A111
Human Anatomy and Physiology I

I. Initiation Date: 6 March 2007

II. Course Information:
   A. College: College of Arts and Sciences
   B. Course Subject/Number: BIOL A111
   C. Credits and Contact Hours: 3.0 credits, 3+3 Contact Hours
   D. Course Title: Introductory Biology
   E. Grading basis: A-F
   F. Course Description: An introduction to human structure and function. The integumentary, skeletal, muscular, nervous and endocrine systems are considered. Special Note: Accepted for biology major credit only by petition. Satisfies UAA general education and CAS natural science degree requirements for specified baccalaureate degree programs. One 3-hour lab per week.
   G. Status of course relative to a degree or certificate program: None
   H. Course Attributes: UAA GER Natural Sciences requirement
   I. Prerequisites: Co-requisite BIOL A111L
   J. Registration Restriction: None
   K. Course fees: Yes

III. Course Activities:

   Course conducted both as lecture with classroom discussions and laboratory activities that reinforce lecture.

IV. Course Evaluation:

   Course grading is A-F. Students will be evaluated through series of examinations and laboratory quizzes and assignments.

V. Instructional Goals and Student Outcomes:

   A. The instructor will:
      • Present the basic structures and concepts of cell and tissue organization.
      • Familiarize students with the fundamentals of the principle organ systems of the body (integumentary, skeletal, muscular, nervous and endocrine).
      • Provide students with explanations of how organ systems of the body are interrelated, allowing students to integrate biological concepts into an understanding of human form and function.
      • Provide laboratory experiences designed to a) assist comprehension and identification of important anatomical features and physiological processes, b) develop critical thinking skills, and c) facilitate the integration of anatomical and physiological concepts.
B. Student Outcomes:

<table>
<thead>
<tr>
<th>Students will be able to:</th>
<th>Assessment method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply the scientific method through formulating hypotheses, proposing testable predictions, and then testing to reach supportable conclusions <strong>about anatomical features and physiological processes</strong></td>
<td>Written exams</td>
</tr>
<tr>
<td>Demonstrate an understanding of the fundamentals of the <strong>anatomy and physiology of the principle organ systems of the human body (integumentary, skeletal, muscular, nervous, and endocrine)</strong>.</td>
<td>Written exams, Laboratory practical exams</td>
</tr>
<tr>
<td>Demonstrate a knowledge of the <strong>major discoveries and advances in anatomy and physiology</strong> that have impacted thought and technology throughout history.</td>
<td>Written exams</td>
</tr>
<tr>
<td>Identify ways in which <strong>anatomy and physiology</strong> have advanced the understanding of important natural processes.</td>
<td>Written exams</td>
</tr>
<tr>
<td>Demonstrate the ability to work with the tools and in the settings <strong>used to understand human form and function</strong>.</td>
<td>Laboratory practical exams</td>
</tr>
<tr>
<td>Critically observe <strong>important anatomical features and physiological processes</strong> and accurately record and analyze observations</td>
<td>Laboratory assignments, practical exams</td>
</tr>
</tbody>
</table>

VI. Course Level Justification:

The exercises and content of this course are designed for introductory level students with little to no background in anatomy and physiology.

VII. Typical Course Outline

1. Introduction to the Human Organism
   1.1 Introduction to the human organism
   1.2 Chemistry comes alive
   1.3 Cell structure and function
   1.4 Physical transport
   1.5 Tissues

2. Integumentary System
   2.1 Skin functions
   2.2 Skin structure
   2.3 Skin derivatives

3. Skeletal System
   3.1 Function, histology
   3.2 Bone classification
   3.3 Bone development, remodeling and repair
   3.4 Homeostatic imbalances of bone
   3.5 Articulations

4. Muscular System
   4.1 Function, types, histology
   4.2 Muscle physiology
   4.3 Force, velocity and duration of contraction
5. **Nervous System**
   5.1 Basic organization, histology
   5.2 Neurophysiology
   5.3 Sensory receptors
   5.4 Spinal cord, spinal nerves and reflexes
   5.5 Brain and cranial nerves
   5.6 Autonomic nervous system

6. **Special Senses**
   6.1 Taste and smell
   6.2 Eye and vision
   6.3 Hearing and equilibrium

7. **Endocrine System**
   7.1 General principles
   7.2 Pituitary gland, pituitary regulation and secretions
   7.3 Thyroid gland
   7.4 Parathyroid glands
   7.5 Adrenal glands
   7.6 Pancreas
   7.7 Gonads

**VIII. Suggested Texts**


**IX. Bibliography**


<table>
<thead>
<tr>
<th>1a. School or College</th>
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<tr>
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<th>5a. Credits/CEU</th>
<th>5b. Contact Hours</th>
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<tr>
<td>Human Anatomy &amp; Physiology II</td>
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9. Repeat Status No | # of Repeats | Max Credits |

10. Grading Basis | A-F | P/NP | NG |

11. Implementation Date | semester/year |
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<tr>
<td>From: Fall/2007</td>
<td>To: 9999/9999</td>
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12. Cross Listed with | Stacked with | Cross-Listed Coordination Signature |

13. List any programs or college requirements that require this course
Nursing Programs, Dental Hygiene, Radiologic Technology, Medical Technology

14. Coordinate with Affected Units:
Faculty List Serve, Nursing, Dental Hygiene, Radiologic Technology, Medical Technology

15. General Education Requirement
- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities

16. Course Description
A continuation of BIOL A111. The circulatory, lymphatic, immune, respiratory, digestive, urinary and reproductive systems are considered. Special Note: Accepted for biology major credit only by petition. Satisfies UAA general education and CAS natural science degree requirements for specified baccalaureate degree programs. One 3-hour lab per week.

17a. Course Prerequisite(s) (list prefix and number)
BIOL A111

17b. Test Score(s)

17c. Co-requisite(s) (concurrent enrollment required)
BIOL A112L

17d. Other Restriction(s) |
- College
- Major
- Class
- Level

17e. Registration Restriction(s) (non-codable)

18. Mark if course has fees

19. Justification for Action
Course content has been revised and up-dated

---

Initiator (faculty only) | Date | Dean/Director of School/College | Date |
Approved | Disapproved: |
Approved | Disapproved: |

Department Chairperson | Date |
Approved | Disapproved: |
Approved | Disapproved: |

Curriculum Committee Chairperson | Date |
Approved | Disapproved: |
Approved | Disapproved: |

Provost or Designee | Date |
Approved | Disapproved: |
Approved | Disapproved: |
Course Content Guide
University of Alaska Anchorage

BIOL A112
Human Anatomy and Physiology II

I. Initiation Date: 6 March 2007

II. Course Information:
A. College: College of Arts and Sciences
B. Course Subject/Number: BIOL A112
C. Credits and Contact Hours: 3.0 credits, 3+3 Contact Hours
D. Course Title: Introductory Biology
E. Grading basis: A-F
F. Course Description: A continuation of BIOL A111. The circulatory, lymphatic, immune, respiratory, digestive, urinary and reproductive systems are considered. Special Note: Accepted for biology major credit only by petition. Satisfies UAA general education and CAS natural science degree requirements for specified baccalaureate degree programs. One 3-hour lab per week.

G. Status of course relative to a degree or certificate program: None
H. Course Attributes: UAA GER Natural Sciences requirement
I. Prerequisites: BIOL A111; Co-requisite BIOL A112L
J. Registration Restriction: None
K. Course fees: Yes

III. Course Activities:

Course conducted both as lecture with classroom discussions and laboratory activities that reinforce lecture.

IV. Course Evaluation:

Course grading is A-F. Students will be evaluated through series of examinations and laboratory quizzes and assignments.

V. Instructional Goals and Student Outcomes:

A. The instructor will:
   • Familiarize students with the fundamentals of the principle organ systems of the body (circulatory, lymphatic, immune, respiratory, digestive, urinary and reproductive).
   • Provide students with explanations of how organ systems of the body are interrelated, including how the organ systems covered in this course relate to those covered BIOL A111, allowing students to integrate biological concepts into an understanding of human form and function.
   • Provide laboratory experiences designed to a) assist comprehension and identification of important anatomical features and physiological processes, b) develop critical thinking skills, and c) facilitate the integration of anatomical and physiological concepts.
B. Student Outcomes:

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<td>Written exams</td>
</tr>
<tr>
<td>Demonstrate an understanding of the fundamentals of the anatomy and physiology of the principle organ systems of the human body (circulatory, lymphatic, immune, respiratory, digestive, urinary and reproductive).</td>
<td>Written exams, Laboratory practical exams</td>
</tr>
<tr>
<td>Demonstrate a knowledge of the major discoveries and advances in anatomy and physiology that have impacted thought and technology throughout history.</td>
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<tr>
<td>Identify ways in which anatomy and physiology have advanced the understanding of important natural processes.</td>
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<td>Demonstrate the ability to work with the tools and in the settings used to understand human form and function.</td>
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</tr>
<tr>
<td>Critically observe important anatomical features and physiological processes and accurately record and analyze observations</td>
<td>Laboratory assignments, practical exams</td>
</tr>
</tbody>
</table>

VI. Course Level Justification:

The exercises and content of this course are designed for introductory level students who have mastered the concepts and terminology covered in BIOL A111.

VII. Typical Course Outline

8. Cardiovascular System
   8.1.0 Blood
      8.1.1 Functions
      8.1.2 Components
      8.1.3 Blood groups
      8.1.4 Hemostasis
      8.1.5 Blood disorders
   8.2.0 Heart
      8.2.1 Anatomy and histology
      8.2.2 Physiology
      8.2.3 Developmental features
   8.3.0 Blood Vessels
      8.3.1 Structure and types of vessels
      8.3.2 Physiology of circulation (pressure & regulation)

9. Lymphatic System
   9.1 Structure and function
   9.2 Lymph nodes and lymphoid tissue

10. Immune System
    10.1 Innate defenses
    10.2 Adaptive defenses
    10.3 Cells of the adaptive immune system
    10.4 Cell-mediated immune response
10.5 Antibody (humoral) immune response

11. Respiratory System
   11.1 Functional anatomy, histology
   11.2 Mechanisms of breathing
   11.3 Gas exchange between blood, lungs and tissues
   11.4 Transport of respiratory gases by blood
   11.5 Control of respiration

12. Digestive System
   12.1 Overview of structure and function, histology
   12.2 Mouth, pharynx, esophagus
   12.3 Small intestine, liver and gall bladder, pancreas
   12.4 Large intestine
   12.5 Physiology of chemical digestion and absorption

13. Urinary System
   13.1 Organ structure and function, histology
   13.2 Electrolyte dynamics

14. Reproductive System
   14.1 Cellular reproduction
   14.2 Male reproductive system
   14.3 Female reproductive system

VIII. Suggested Texts


IX. Bibliography


GER Preamble Student Outcome
6. Identify ways in which science has advanced the understanding of important natural processes.

Complex systems studies have provided a new set of methodologies to analyze the emergent properties of nonlinear systems that cannot be fully understood by a description of their component parts. The application of complex systems theories, models, and their application to physical, biological, and social systems has moved from a niche specialization to gain broad acceptance as an essential complement to reductionism in advancing our understanding of important natural processes. One example of this trend can be found in the inclusion of a new section on complex systems in the first chapter of the current editions of introductory biology textbooks, and an increased emphasis on emergent properties throughout such texts. “The emergent properties of life, however, are particularly challenging to study because of the unrivaled complexity of biological systems. An important focus of biology today is the study of whole integrated systems, ranging from the functioning of the biosphere to the complex molecular machinery of a cell.”¹ “Biology is turning in an exciting new direction as many researchers begin to complement reductionism with new strategies for understanding the emergent properties of life-how all the parts of biological systems such as cells are functionally integrated.”²

The course content of BIOL A200/CPLX A200 introduces complex systems studies, and how they have made significant contributions to our understanding of important natural processes. Students in a diversity of disciplines including, the physical, life, and social sciences should be exposed to the science of complexity as it is becoming a significant component of current advances in research in a variety of disciplines. It thus represents a useful addition to the GER Natural Sciences to satisfy the GER Preamble Student Outcome above.

Non-science students would also benefit from a course that requires students previously exposed to traditional reductionism in science to discover non-linear and systems modes of thinking. From a pedagogical perspective, challenging students to change their analytical viewpoint from reductionist to systems thinking provides a useful component to a liberal arts education by allowing students to explore different frames of reference for interpreting both natural and human-constructed systems.

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

1a. School or College  
AS CAS

1b. Division  
AMSC Division of Math Science

1c. Department  
Biological Sciences

2. Course Prefix  
BIOL

3. Course Number  
A200

4. Previous Course Prefix & Number  

5a. Credits/CEU  
3

5b. Contact Hours  
(Lecture + Lab) (3+0)

6. Complete Course/Program Title  
Introduction to Complexity

Abbreviated Title for Transcript (30 character)

7. Type of Course  
☑ Academic  ☐ Non-credit  ☐ CEU  ☐ Professional Development

8. Type of Action  
☑ Course  ☐ Program

☐ Add  ☑ Change  ☐ Delete

☐ Prefix  ☐ Credits  ☐ Title  ☐ Grading Basis  ☑ Course Description  ☑ Test Score Prerequisites  ☐ Other Restrictions

☐ Course Number  ☐ Contact Hours  ☑ Repeat Status  ☐ Cross-Listed/Stacked  ☐ Course Prerequisites  ☑ Co-requisites  ☐ Registration Restrictions

☐ Class  ☐ Level  ☐ College  ☐ Major  ☑ Other GER Status

9. Repeat Status No  ☐ # of Repeats  ☐ Max Credits

10. Grading Basis  
☑ A-F  ☐ P/NP  ☐ NG

11. Implementation Date  
From: Fall/2007  To: /9999

12. Cross Listed with  
☐ CPLX A200

☐ Stacked  with  ☐ Cross-Listed Coordination Signature

13. List any programs or college requirements that require this course

14. Coordinate with Affected Units:  
Faculty List Serve, Deans & Directors UAA, Mat-Su College, KPC, Kodiak College, & PWSCC

Initiator Signature  Date

Department, School, or College

15. ☑ General Education Requirement  
☐ Oral Communication  ☐ Written Communication  ☐ Quantitative Skills  ☐ Humanities

☐ Fine Arts  ☐ Social Sciences  ☐ Natural Sciences  ☐ Integrative Capstone

16. Course Description  
An introduction to the science of complexity, currently used to predict system behavior in the physical, life, and social sciences.

17a. Course Prerequisite(s) (list prefix and number)  
MATH A107 or MATH A172

17b. Test Score(s)

17c. Co-requisite(s) (concurrent enrollment required)

17d. Other Restriction(s)

☐ College  ☐ Major  ☐ Class  ☐ Level

17e. Registration Restriction(s) (non-codable)

18. ☐ Mark if course has fees

19. Justification for Action  
Complex systems have provided a new set of methodologies to analyze the emergent properties of nonlinear systems that cannot be fully understood by a description of their component parts. An introductory course in this area is an appropriate addition to GER Natural Sciences for students in a variety of disciplines including the physical, life, and social sciences, as complex systems studies are recognized as an essential complement to reductionism in advancing our understanding of important natural processes.

Initiator (faculty only)  Date

☐ Approved  ☐ Disapproved:

Dean/Director of School/College  Date

☐ Approved  ☐ Disapproved:

Department Chairperson  Date

Undergraduate or Graduate  Academic Board Chairperson  Date

☐ Approved  ☐ Disapproved:

Provost or Designee  Date

127
I. Initiation Date: February 1, 2007

II. Course Information:
A. College: College of Arts and Sciences
B. Course Subject/Number: BIOL A200
C. Credits and Contact Hours: 3.0 credits, 3+0 Contact Hours
D. Course Title: Introduction to Complexity
E. Grading basis: A-F

F. Course Description: An introduction to the science of complexity, currently used to predict system behavior in the physical, life, and social sciences.

G. Status of course relative to a degree or certificate program: None

H. Course Attributes: UAA GER Natural Sciences requirement
I. Prerequisites: MATH A107 or MATH A172
J. Registration Restriction: None
K. Course fees: None

III. Course Activities:

Course conducted primarily as lecture with classroom discussions.

IV. Course Evaluation:

Course grading is A-F. The evaluation methods are at the discretion of the faculty member. However, the primary evaluation tools should be designed to assess how well students have been introduced to the ideas and methodologies used to understand complex systems. Written exams, written reports on primary literature, and a research project that models data from a real-world complex system are some suggested course assignments. An emphasis on collaborative interactions in student teams is recommended to serve a variety of students from different disciplines. The final grade should be based on how well the student achieves the course goals as defined in student outcomes.

V. Course Level Justification:

This course has a 100 level MATH prerequisite, and is listed at the 200-level as it introduces students from a variety of disciplines to nonlinear complex systems thinking. The introductory level presentation and 200-level promotes accessibility to an interdisciplinary student enrollment.
VI. Course Outline

1.0 Introduction to Complex Systems and Biology: Terminology

1.1 Definition of complexity
1.2 Structure/function of biological molecules, organelles, & cells
1.3 Enzymes and chemical reactions in living systems
1.4 Ecosystem structure, evolution, and natural selection
1.5 Energy flow in open and closed systems
1.6 Development of system theories
1.7 Non-linear systems: Feedback loops
1.8 Patterns: Self-organization of networks & emergent properties
1.9 Dissipative structures: Source of ordered pattern formation.
1.10 Autopoiesis: Self-making of living systems.

2.0 Introduction to Mathematical Language of Complex Systems

2.1 Linear versus nonlinear equations
2.2 Feedback and iterations
2.3 Phase portraits: Attractors and other trajectories in abstract phase space
2.4 Differences between complexity and chaos
2.5 Self-similarity: Fractal geometry
2.6 Edge of chaos networks, phase transitions, & bifurcation points
2.7 Universality classes: simple rules lead to complex behavior
2.8 Cellular automaton

3.0 Dynamics of physical Complex Systems: Self-Organized Criticality

3.1 Complex system models: Limitations of their predictions
3.2 Power Laws: Cellular automaton computer models
3.3 Discovery of self-organized criticality: The sandpile model
3.4 Application of self-organized criticality: Landscape formation and earthquakes
3.5 Complex living systems: Self-organized criticality at the edge of chaos
3.6 Complex models for fitness and punctuated equilibrium in evolution
3.7 Self-organized criticality as the most efficient state

4.0 Development of Models for Complex Biological Systems

4.1 Origin of life: Autocatalytic networks
4.2 Boolean networks: Basins of attraction in phase space
4.3 Modeling the edge of chaos: Power laws and avalanches of change
4.4 Modeling genetic networks, cell differentiation, and development
4.5 Modeling evolution: Natural selection and fitness
4.6 Modeling evolution: Self-organization in a coupled fitness landscape
4.7 Modeling self-organization of neural and social organism networks
4.8 Modeling human social and economic networks

5.0 Current models for describing Complex Biological Systems

5.1 Cellular Automata
5.2 Complex adaptive systems: Genetic algorithms and artificial intelligence
5.2 Agent-based modeling
5.3 Scaling in biological systems: From molecules to the biosphere
5.4 Genomic-Proteomic network models of cell function
5.5 A fourth law of thermodynamics: Complexity keeps increasing
VII. **Instructional Goals and Student Outcomes**

The Instructor will:

1. Introduce students to terminology and processes that are used to describe complex systems.

2. Introduce students to the mathematical principles used to describe and model complex systems.

3. Explain the application of the scientific method to complex systems, and the limitations in the predictions of their behavior obtained by analysis of historical data or modeling.

4. Explain the development of a model for physical complex systems behavior, self-organized criticality, and its application to predicting the behavior of real-world complex systems.

5. Describe the evolution of models of complex biological systems. Explain the construction of these models and their successful prediction of the properties of biological systems.

6. Describe some current models for describing complex systems, and how application of complex systems thinking and modeling has impacted research and advances in biology and other disciplines.

<table>
<thead>
<tr>
<th>Defined Outcomes</th>
<th>Assessment Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Student will be able to:</td>
<td></td>
</tr>
<tr>
<td>Demonstrate the ability to apply an understanding of complex systems terminology, mathematics, and processes to describe and analyze assigned readings including primary literature.</td>
<td>Written exams and/or written reports</td>
</tr>
<tr>
<td>Describe the application of the scientific method for analysis of complex systems, in particular the limitations inherent in the lack of predictability of a systems final state and emergent properties.</td>
<td>Written exams and/or written reports</td>
</tr>
<tr>
<td>Explain the application of the self-organized criticality model to physical and biological complex systems, and how it has advanced the understanding of important natural processes.</td>
<td>Written exams, written reports, and/or research project</td>
</tr>
<tr>
<td>Discuss models developed to describe complex biological systems and relate their application to the successful prediction and understanding of the properties of biological systems.</td>
<td>Written exams and/or written reports</td>
</tr>
<tr>
<td>Summarize some current modeling approaches and theories for describing complex systems, how they have impacted thinking in biology, and our understanding of important natural processes.</td>
<td>Written exams, written reports, and/or research project</td>
</tr>
</tbody>
</table>
VIII. Suggested Texts


IX. Bibliography


Library Resource Form

Excerpts from the Northwest Association of Schools and Colleges Accreditation Handbook 1999 Edition

Standard Five - Library And Information Resources
Standard 5.A - Purpose and Scope
The primary purpose for library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution's mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

Standard Two - Educational Program And Its Effectiveness
Standard 2.A. - General Requirements
2.A.8 Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.

Program/Course Title: BIOL A200 Introduction to Complexity

1. Please identify the library liaison consulted in preparation of this proposal.

   Name: Daria O. Carle
   Associate Professor
   Science Reference Librarian

   To see who your library liaison is at:
   UAA go to: http://www.lib.uaa.alaska.edu/webgroup/liaison.php3
   Kenai Peninsula College go to: http://www.uaa.alaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
   Kodiak College go to: http://www.koc.alaska.edu/library/default.html
   Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.

   1.
   2.
   3.

Initiator signature
Curriculum Coordination Form

Notification Date: 3/30/07

Initiating unit: CAS, Department of Biological Sciences

Affected unit(s): Biological Sciences Department, CAS; Chugiak/Eagle River Campus; Kenai Peninsula College; Kodiak College; Mat-Su College; Elmendorf Air Force Base; Fort Richardson Army Post;

Course Prefix and Number: BIOL A200   Previous Prefix and Number: N/A

Complete Course/Program Title: Introduction to Complexity

Previous Course/Program Title: N/A

Description of Action: Cross-listing with existing CPLX A200 and seeking GER Natural Sciences status.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Resource Implication Form

1. School/College CAS

2. Program/Course Introduction to Complexity

3. Course Prefix BIOL

4. Course Number A200

5. Implementation Date Fall 2007

6. Type of Action and Category
   - Course addition
   - Course change
   - Program addition
   - Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - part-time faculty $,
   - new full-time faculty $,
   - reassignment of full-time faculty $,
   - additional class/lab space $,
   - modification of class/lab space $,
   - additional library resources $,
   - additional computer equipment $,
   - other costs $

8. Explanation: No costs will be incurred as existing science faculty will instruct the course as part of their workload.

_______ Approved
_______ Disapproved

Department Chair

_______ Approved
_______ Disapproved

Dean/Director of School/College

_______ Approved
_______ Disapproved

Provost

Date
1a. School or College
AS CAS

1b. Division
AMSC Division of Math Science

1c. Department
Biological Sciences

2. Course Prefix
CPLX

3. Course Number
A200

4. Previous Course Prefix & Number

5a. Credits/CEU
3

5b. Contact Hours
(Lecture + Lab)
(3+0)

6. Complete Course/Program Title
Introduction to Complexity

Abbreviated Title for Transcript (30 character)

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

8. Type of Action
☒ Course
☐ Program

☐ Add
☐ Change
☐ Delete (mark appropriate boxes)

☐ Prefix
☐ Credits
☐ Title
☐ Grading Basis
☐ Course Description
☐ Test Score Prerequisites
☐ Other Restrictions
☐ Class
☐ Level
☐ College
☐ Major
☑ Other GER Status

9. Repeat Status No
# of Repeats
Max Credits

10. Grading Basis
☒ A-F
☐ P/NP
☐ NG

11. Implementation Date
From: Fall/2007
To: /9999

12. ☒ Cross Listed with
BIOL A200

☐ Stacked with
Cross-Listed Coordination Signature

13. List any programs or college requirements that require this course

14. Coordinate with Affected Units:
Faculty List Serve, Deans & Directors UAA, Mat-Su College, KPC, Kodiak College, & PWSCC
Department, School, or College

Initiator Signature
Date

15. ☒ General Education Requirement
☐ Oral Communication
☐ Written Communication
☐ Quantitative Skills
☐ Humanities
☐ Fine Arts
☐ Social Sciences
☐ Natural Sciences
☒ Integrative Capstone

16. Course Description
An introduction to the science of complexity, currently used to predict system behavior in the physical, life, and social sciences.

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17b. Test Score(s)

17c. Co-requisite(s) (concurrent enrollment required)

17d. Other Restriction(s)

☐ College
☐ Major
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☐ Level

17e. Registration Restriction(s) (non-codable)

18. ☐ Mark if course has fees

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Complex systems have provided a new set of methodologies to analyze the emergent properties of nonlinear systems that cannot be fully understood by a description of their component parts. An introductory course in this area is an appropriate addition to GER Natural Sciences for students in a variety of disciplines including the physical, life, and social sciences, as complex systems studies are recognized as an essential complement to reductionism in advancing our understanding of important natural processes.

Initiator (faculty only)
Date

Dean/Director of School/College
Date

Department Chairperson
Date

Undergraduate or Graduate Academic Board Chairperson
Date

Provost or Designee
Date

Approved
Disapproved:

Approved
Disapproved:

Approved
Disapproved:

Approved
Disapproved:

Approved
Disapproved:

Approved
Disapproved:

Approved
Disapproved:

Approved
Disapproved:
University of Alaska Anchorage
Course Content Guide

I. Initiation Date: February 1, 2007

II. Course Information:
A. College: College of Arts and Sciences
B. Course Subject/Number: CPLX A200
C. Credits and Contact Hours: 3.0 credits, 3+0 Contact Hours
D. Course Title: Introduction to Complexity
E. Grading basis: A-F

F. Course Description: An introduction to the science of complexity, currently used to predict system behavior in the physical, life, and social sciences.

G. Status of course relative to a degree or certificate program: None

H. Course Attributes: UAA GER Natural Sciences requirement
I. Prerequisites: MATH A107 or MATH A172
J. Registration Restriction: None
K. Course fees: None

III. Course Activities:
Course conducted primarily as lecture with classroom discussions.

IV. Course Evaluation:
Course grading is A-F. The evaluation methods are at the discretion of the faculty member. However, the primary evaluation tools should be designed to assess how well students have been introduced to the ideas and methodologies used to understand complex systems. Written exams, written reports on primary literature, and a research project that models data from a real-world complex system are some suggested course assignments. An emphasis on collaborative interactions in student teams is recommended to serve a variety of students from different disciplines. The final grade should be based on how well the student achieves the course goals as defined in student outcomes.

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4.8 Modeling human social and economic networks

5.0 Current models for describing Complex Biological Systems

5.1 Cellular Automata
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5.2 Agent-based modeling
5.3 Scaling in biological systems: From molecules to the biosphere
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VII. **Instructional Goals and Student Outcomes**

The Instructor will:
1. Introduce students to terminology and processes that are used to describe complex systems.
2. Introduce students to the mathematical principles used to describe and model complex systems.
3. Explain the application of the scientific method to complex systems, and the limitations in the predictions of their behavior obtained by analysis of historical data or modeling.
4. Explain the development of a model for physical complex systems behavior, self-organized criticality, and its application to predicting the behavior of real-world complex systems.
5. Describe the evolution of models of complex biological systems. Explain the construction of these models and their successful prediction of the properties of biological systems.
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VIII. Suggested Texts


IX. Bibliography


Resource Implication Form

1. School/College CAS

2. Program/Course Introduction to Complexity

3. Course Prefix CPLX

4. Course Number A200

5. Implementation Date Fall 2007

6. Type of Action and Category
   - Course addition
   - Course change
   - Program addition
   - Program change

7. Consequences of Actions and Costs: Check all appropriate categories and provide an explanation of how it will be funded and by whom.
   - part-time faculty $ $
   - new full-time faculty $ $
   - reassignment of full-time faculty $ $
   - additional class/lab space $ $
   - modification of class/lab space $ $
   - additional library resources $ $
   - additional computer equipment $ $
   - other costs $ $

8. Explanation: No costs will be incurred as existing science faculty will instruct the course as part of their workload.

Approved

Disapproved

Department Chair

Date

Approved

Disapproved

Dean/Director of School/College

Date

Approved

Disapproved

Provost

Date
Curriculum Coordination Form

Notification Date: 3/30/07

Initiating unit: CAS, Department of Biological Sciences

Affected unit(s): Biological Sciences Department, CAS; Chugiak/Eagle River Campus; Kenai Peninsula College; Kodiak College; Mat-Su College; Elmendorf Air Force Base; Fort Richardson Army Post;

Course Prefix and Number: CPLX A200   Previous Prefix and Number: BIOL A200

Complete Course/Program Title: Introduction to Complexity

Previous Course/Program Title: Introduction to Complexity

Description of Action: Cross-listing with existing BIOL A200 and seeking GER Natural Sciences status.

Supporting documentation of the proposal is attached.

Initiating faculty are also REQUIRED to send an email to uaa-faculty@uaa.alaska.edu describing the proposal, including the proposed action and the course prefix, number, course description, prerequisite, and any other relevant information.

Any questions concerning the proposed changes may be addressed to the appropriate department chair, or the chair of the appropriate curriculum committee. Written comments may also be sent to the UAB or GAB, in care of the Governance Office, at the following address:

University of Alaska Anchorage
Governance Office, ADM 213
3211 Providence Drive
Anchorage, AK 99508

If no written comments are received by the UAB or GAB within ten (10) days of notification date shown above, it is assumed that there are no objections to the proposal.

Note: Acknowledgement of coordination does not mean approval, it is only meant to verify that coordination has occurred.
Program/Course Title: CPLX A200 Introduction to Complexity

1. Please identify the library liaison consulted in preparation of this proposal.

   Name: Daria O. Carle
   Associate Professor
   Science Reference Librarian

   To see who your library liaison is at:
   UAA go to: http://www.lib.uaa.alaska.edu/webgroup/liaison.php3
   Kenai Peninsula College go to: http://www.uaa.alaska.edu/kenai/KPC%20Library%20Webpage/frameset.html
   Kodiak College go to: http://www.koc.alaska.edu/library/default.html
   Mat-Su College go to: http://www.matsu.alaska.edu/library/library_staff.htm

2. Please list any new library and information recommended to support the proposal.

   1.
   2.
   3.

Initiator signature
### 1. School or College
CT CTC

### 2. Course Prefix
CA

### 3. Course Number
A495

### 4. Previous Course Prefix & Number
CA A495

### 5. Credits
6 credits

### 6. Contact Hours (Lecture + Lab)
2 + 40

### 6. Complete Course/Program Title
Hospitality Internship

### 7. Type of Course
- Academic
- Non-credit
- CEU
- Professional Development

### 8. Type of Action
- Course
- Program

### 9. Repeat Status
- No
- # of Repeats
- Max Credits

### 10. Grading Basis
- A-F
- P/np
- NG

### 11. Implementation Date
- semester/year
  - From: FA/2007
  - To: N/A

### 12. Cross Listed with
- N/A

### 13. List any programs or college requirements that require this course
- BAHRM

### 14. Coordinate with Affected Units:
- Not applicable

### 15. General Education Requirement
- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

### 16. Course Description
Allows for application of theoretical concepts and principles in the hospitality restaurant management work environment. Emphasizes professional competency in customer relations and service, human resource management, operations management, food and beverage cost control, marketing, ethics, and service quality control. Requires a minimum of 560 hours at work site plus 40 hours of related seminar instruction and project work.

Special note: Requires professional business attire.

### 17. Course Prerequisite(s)
- Prefix and number
- Test Score(s)
- Co-requisite(s)
- Other Restriction(s)
- Registration Restriction(s)
- Completion of Business Core and UNLV or NAU Core with cumulative min. GPA of 2.0
- Completion of Tier I GER (Basic College-level Skills) requirements

### 18. Justification for Action
Updates required GER integrative capstone course for Bachelor of Arts Hospitality and Restaurant Management and reduces required hours to a more manageable student workload.

---

**Approved**
Initiator (faculty only)

**Disapproved**
Dean/Director of School/College

---

**Approved**
Department Chairperson

**Disapproved**
Undergraduate or Graduate Academic Board Chairperson

---

**Approved**
Curriculum Committee Chairperson

**Disapproved**
Provost or Designee
I. Course Description

Allows for application of theoretical concepts and principles in the hospitality restaurant management work environment. Emphasizes professional competency in customer relations and service, human resource management, operations management, food and beverage cost control, marketing, ethics, and service quality control. Requires a minimum of 560 hours at work site plus 40 hours of related seminar instruction and project work.

Special note: Requires professional business attire.

II. Course Design

A. Integrates knowledge and skills acquired in GER and major requirements for the BAHRM with the application of hospitality restaurant management principles for students in their senior year.

B. 6.0 credits

C. Total time of student involvement: 600 hours

1) Tutorial: 20 hours
2) Projects: 20 hours
3) Work site: 560 hours

D. This course is required for the Bachelor of Arts in Hospitality Restaurant Management.

E. No lab fees are assessed for this course.

F. Special note: Course may be taught in a 40 hour weekly timeframe in not less than 15 weeks. Intern may not work on site beyond the number of hours allowed by law. To serve alcoholic beverages, intern must be 21 years old.

G. This is a revised course.
H. Course coordinated with: Not applicable

I. Course Level Justification: Integrates knowledge from GER courses and the Culinary Arts Core, UAA Business Core and UNLV or NAU Hospitality Management Core.

III. Course Activities

Includes various practicum learning experiences at hospitality/hotel/restaurant venues supplemented with related tutorial instruction with faculty.

IV. Course Registration Restrictions

1) Completion of GER Tier 1 (Basic college-level skills).
2) Completion of Culinary Core, Business Core, UNLV or NAU Hospitality Core.
3) Maintain minimum cumulative GPA of 2.0

V. Course Evaluation

A. Grades will be A-F.
B. Evaluation will be based on industry research papers, written exams, work related projects, solutions to proscribed hypotheticals.

VI. Course Outline

Because the internship objectives will be different for each student, an individual course outline will be completed for each student’s experience prior to beginning work. Consideration will be given to the topic areas listed below:

1.0 Guest and employee safety
2.0 Information management systems
3.0 Human resource management and employee relations
4.0 Marketing and public relations
5.0 Purchasing, inventory and cost control systems
6.0 Strategic planning
7.0 Service quality control
8.0 Ethical practices in the hospitality industry
9.0 Hospitality concepts and design
10.0 Operations management:
   a. Foodservice operations
   b. Beverage operations
   c. Conference and catering operations
   d. Hotel and lodging operations
e. Entertainment operations

VII. Required Course Documents

1) Intern/employer agreement (contract)
2) Intern log book

VIII. Bibliography and References


IX. Outcomes and Assessment
**Instructional Goal:** Prepare students, through intensive internship experience, to meet education, management and professional conduct requirements expected by the restaurant and hospitality industry.

<table>
<thead>
<tr>
<th>Student Outcomes</th>
<th>Relation to GER Capstone requirements</th>
<th>Assessment Strategies (Artifacts)</th>
</tr>
</thead>
</table>
| Apply hospitality management principles to assess safety, security and sanitation systems and determine if guest and work environments are safe, secure and sanitary. | Integrate knowledge of core culinary and business courses and natural science to evaluate viability of systems and protocols. | -Intern log book  
-Individualized projects  
-Project presentations  
-Preceptor evaluations  
-Solutions to real and hypothetical workplace scenarios  
-Research of industry literature |
| Apply hospitality management practices and principles of food, beverage, labor and lodging cost control to ensure profitability. | Integrate knowledge from across the GER and critical thinking, written and oral communication skills to evaluate and communicate the soundness of an operation’s systems and propose viable solutions or improvements. | -Intern log book  
-Individualized projects  
-Project presentations  
-Preceptor evaluations  
-Solutions to real and hypothetical workplace scenarios  
-Research of industry literature |
| Apply hospitality management principles to review human resource management and supervision practices. | Integrate skills and knowledge gained in core business courses, social sciences and humanities to determine effectiveness of human resource and labor relations. | -Intern log book  
-Individualized projects  
-Project presentations  
-Preceptor evaluations  
-Solutions to real and hypothetical workplace scenarios  
-Research of industry literature |
| Research customer service satisfaction and develop strategy for improvement         | Utilize information literacy to assess and improve customer satisfaction.                                | -Intern log book  
-Individualized projects  
-Project presentations  
-Preceptor evaluations  
-Solutions to real and hypothetical workplace scenarios  
-Research of industry literature |
To: uaa faculty  
Subject: GER “General Purpose” Capstone MiniGrants: Request for Course Proposals, Deadline May 23rd

Dear Colleagues,

The General Education Review Committee (GERC) is eliciting individual and collective input in developing course proposals to address the need for “General Purpose” Tier 3 GER Integrative Capstone courses to meet the needs of baccalaureate students without a Capstone course in their major. Admission to all capstone courses requires completion of the 12 credits of Tier 1 College-Level Basic Skills and typically Junior Standing. “General Purpose” capstones are those for which any additional prerequisites are met by general completion of GER Tier 2 category(ies) or completion of Tier 2 courses commonly taken by large numbers of baccalaureate students. Minigrants for $1,000.00 per course are available to full-time UAA faculty members who develop proposals during Summer 2007 for new “General Purpose” Integrative Capstone courses. Seven (7) minigrants will be awarded.

Attached to this email are (1) the “General Purpose” Integrative Capstone MiniGrant Packet (attachment 1) and (2) the Integrative Capstone Curriculum Model (attachment 2). Proposals must address the curricular requirements detailed in the attached Integrative Capstone Curriculum Model and Assessment Criteria. The criteria used to evaluate the “General Purpose” Integrative Capstone proposals are also detailed for your review.

If you have any questions about the “General Purpose” Integrative Capstone or preparing the proposal, contact Caedmon Liburd, Chair UAB at 786-1647 or afcal@uaa.alaska.edu

Please submit your proposal with cover sheet to the UAA Governance Office electronically as email attachments to aygov@uaa.alaska.edu by Wednesday, May 23rd 2007.

Sincerely,

Caedmon Liburd,  
Chair UAB
Minigrants for $1,000.00 per course are available to full-time UAA faculty members to develop proposals during Summer 2007 for “General Purpose” courses for the Integrative Capstone category of the UAA GER for the graduating Baccalaureate students without a defined capstone course in their major/program. All capstone courses require completion of the 12 credits of Tier 1 College-Level Basic Skills, and typically Junior Standing, but “General Purpose” capstones are defined as those for which any additional required prerequisites are met by general completion of GER Tier 2 category(ies) or completion of Tier 2 courses commonly taken by large numbers of baccalaureate students. Proposals must address the curricular requirements detailed in the attached Integrative Capstone Curriculum Model and Assessment Criteria (attachment 2). The criteria used to evaluate the Integrative Capstone proposals are detailed on the following page.

Name(s):____________________________ Phone:_____________ Email:__________

Department:___________________________________ Location:_______________________

Course Number and Title:_____________________________________________________________

This is a: □ new course □ revised course

This proposal should follow the outline of a course content guide. Though it need not be fully developed, it should include enough detail to allow evaluation of your proposal and assessment of the potential for the course to (1) meet the requirements of the integrative capstone category, (2) be meaningful, attractive and accessible to students in a number of majors, and (3) to provide opportunity for assessment of a number of GER outcomes including knowledge integration.

If the proposal is funded, you agree:

- To submit the course through the normal curriculum review process (department, college, and university wide peer-review) in Fall 2007;
- To submit the course proposal with appropriate CARs and CCGs attached so that it arrives at the appropriate School/ College Curriculum Review Committee no later that 1 October 2007;
- To accept an assignment, if offered by your dean or director, to instruct the course for the first time between Fall 2008 and Spring 2009;
- To implement the course assessments described in the proposal;
- To participate in GER Integrative Capstone assessment activities; and
- To write an assessment report after the course has been delivered two semesters for the GER Committee detailing student achievement in the Integrative Capstone course.

______________________________________       _______________
Faculty Signature(s)      Date

If you have any questions about the Integrative Capstone or preparing the proposal, contact Caedmon Liburd, Chair of UAB at 786-4364 or afcal@uaa.alaska.edu

Please submit your proposal with cover sheet to the UAA Governance Office electronically as email attachments to aygov@uaa.alaska.edu by Wednesday, May 23rd 2007.
Instructions for

FACULTY MINIGRANT PROPOSALS FOR
“GENERAL PURPOSE” GER INTEGRATIVE CAPSTONE COURSES,
2007-2008

DEADLINE FOR SUBMISSION: May 23, 2007

Please review the following instructions as you develop your minigrant proposal for a GER Integrative Capstone course. The following format indicates what the proposal should address, but it need not be adhered to literally. First, read carefully the Integrative Capstone Curriculum Model and Assessment Criteria (attachment 2), and in a write-up not to exceed five double spaced pages, please indicate the following.

Suggested Format

1. Course Number and Title
2. Course Description (as it might appear in the catalog)
   - Consider a thematic focus dealing with the emerging 21st century (such as the forces of globalization and diversity; scientific, social, and technological change)
3. Course Narrative (what you want the course to achieve)
   - What is your intent in the course?
   - How does it meet the upper-division requirements (course level justification) for Integrative Capstone courses?
   - How does it meet the intent of the Integrative Capstone model?
   - How does it address GER Basic College-Level Skills (Tier 1) and Disciplinary Area (Tier 2) integration?
   - How are the required prerequisite(s), course content, and course activities consistent with providing access to students in a variety of majors and programs?
   - How has the course content been designed to satisfy integrative capstone requirements in the context of appealing to the interests of a variety of students with different disciplinary backgrounds?
   - Describe any other significant aspects of the course.
4. Course Instructional Goals and Student Outcomes
   - Knowledge Integration and at least 3 out of the 4 instructional goals and student outcomes (see Curriculum Model and Assessment Criteria, section 5.0)
   - List and describe any other course-specific instructional goals and student outcomes the course will engage.
5. Course Assessment Strategies (Knowledge Integration and at least 2 out of the 4 detailed above, see Curriculum Model, Section 6.0)
   - For each Instructional Goal and Student Outcome, describe how you will assess student achievement in each of those areas.
   - What specific assignments will students be asked to complete to demonstrate their achievement in the course?
   - What specific student artifacts will be created to document student achievement in the course?
6. Additional Material
   - Please feel free to include any other information that will assist the review committee in assessing the potential of your proposal for the Integrative Capstone category.

The GER Summer Working Group will use the following criteria to review your proposal:

<table>
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<tr>
<th>The course proposal addresses the requirement:</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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<tbody>
<tr>
<td>1. Knowledge Integration is incorporated as part of the course design</td>
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<td>2. Knowledge Integration is specifically addressed as part of outcomes assessment</td>
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<td>3. At least 3 out 4 other Instructional Goals and Student Outcomes are part of the course design</td>
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<td>● Effective Communication</td>
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<td>● Critical Thinking</td>
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<td>● Information Literacy</td>
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<td>● Quantitative Perspectives</td>
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<td>4. (Performance in Knowledge Integration and at least 2 of the other chosen Instructional Goals and Student Outcomes referenced in 3 are assessed)</td>
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<td>5. Generates student artifacts that demonstrate achievement in the student outcomes</td>
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