I. Minutes from previous meeting – **March 30, 2010**

II. Consent Items

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<td>Revised Effective Date</td>
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### A. College of Arts and Letters

1. **PHI 342H**  
   PHI 342  
   Contemporary Analytic Philosophy - Honors  
   Fall 2011  
   Delete Course

2. **PHI 342W**  
   PHI 342W  
   Contemporary Analytic Philosophy  
   Fall 2011  
   Delete Course

3. **Cinema and Visual Culture**  
   Cinema and Visual Culture Studies Minor  
   Fall 2010  
   Minor Reqmts-Course(s) Added  
   Support_Lin  
   8 Term Plan:

4. **Museum Studies Minor**  
   Museum Studies Minor  
   Fall 2010  
   Minor Reqmts-Course(s) Added  
   Support_Lin  
   8 Term Plan:

### B. College of Engineering, Forestry, and Natural Sciences

1. **CHM 442C**  
   CHM 442  
   Physical Chemistry II  
   Spring 2011  
   Co-convene

2. **MAT 131**  
   MAT 131  
   Topics in Calculus  
   Fall 2010  
   Units

3. **MAT 155**  
   MAT 155  
   Principles of Mathematics II  
   Fall 2010  
   Prereqs

4. **STA 270**  
   STA 270  
   Applied Statistics  
   Fall 2010  
   Prereqs
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### C. College of Social and Behavioral Sciences

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### D. Academic Affairs – Liberal Studies

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### Test Score Changes

**9. Test Credit**  
Undergraduate Studies  
Fall 2010  
Additions to Competency Exams for Credit  
Effective – Fall 2010

### III. Action Items

#### A. College of Arts and Letters

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Component</th>
<th>Effective Date/Revised Effective Date</th>
<th>Summary of Changes</th>
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</table>
| **1. MUS 396**  
MUS 396 | 396  
The Broadway Musical: A Study of Musical Theater from an Artistic, Historical, and Cultural Perspective | Fall 2010 | New Course |
| **2. PHI 345W**  
PHI 345W | 345W  | Moral Foundations of Property & Markets | Fall 2011 | New Course |
| **3. PHI 345WH**  
PHI 345WH | 345WH  | Moral Foundations of Property & Markets | Fall 2011 | New Course |
| **4. BA Philosophy, Politics, and Law**  
BA Philosophy, Politics, and Law BA (Ext.) |  
Fall 2011 | New Plan | Support | BA Philosophy, Politics, and Law  
8 Term |
| **5. English Placement** |  | Summer 2010 |  | ACT of 17 - 29 take ENG 105  
ACT 30 - 36 take ENG 205  
SAT 340 - 690 take ENG 105  
SAT 700 - 800 take ENG 205 |

#### B. College of Engineering, Forestry, and Natural Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Component</th>
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</thead>
</table>
| **1. BIO 182L**  
BIO 182L | 1 Unity of Life II Laboratory | Spring 2011 | New Course |
| **2. BIO 182**  
BIO 182 | 4 UNITY OF LIFE II: LIVES OF MULTICELLULAR ORGANISMS | Spring 2011 | Coreqs, Units |
| **3. BIO 201L**  
BIO 201L | 1 BIO 201 HUMAN ANATOMY/PHYSIOLOGY I LAB | Spring 2011 | New Course |
| **4. BIO 201**  
BIO 201 | 4 Human Anatomy/Physiology I | Spring 2011 | Catalog Descr, Coreqs, Prereqs, Units |
<table>
<thead>
<tr>
<th></th>
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<th>Course Title</th>
<th>Semester</th>
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<td>Human Anatomy/Physiology I</td>
<td>Spring 2011</td>
<td>Catalog Descr, Coreqs, Prereqs, Units</td>
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<td>CHM 130L</td>
<td>Fundamental Chemistry Lab</td>
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### C. Academic Affairs – Liberal Studies

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### D. Other

1. Election of Chair of UCC for the 2010-2011 Academic Year

2. [2010-2011 UCC Calendar](#)
### A. Undergraduate Studies

#### Liberal Studies Addition

<table>
<thead>
<tr>
<th></th>
<th>Course Code</th>
<th>Course Name</th>
<th>Effective Date/Revised Effective Date</th>
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### B. The College of Education

<table>
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<th>Summary of Changes</th>
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<tr>
<td>1.</td>
<td>BAS Early Childhood Education</td>
<td>Early Childhood Education BAS</td>
<td>Major Reqmts-Course(s) Deleted</td>
<td>Support_Lin 8 Term Plan:</td>
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<td>2.</td>
<td>BSED Secondary Education</td>
<td>Spc &amp; Secondary Ed BSED</td>
<td>Delete Plan</td>
<td>Support_Lin 8 Term Plan:</td>
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<td>3.</td>
<td>BSED CTE Extended Major</td>
<td>CTE (Ext.) BSED</td>
<td>Major Reqmts-Course(s) Added, Text within Plan</td>
<td>Support_Lin 8 Term Plan: BSED CTE 8 Term Plan</td>
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</table>

Family and Consumer Sciences
C. The College of Engineering, Forestry and Natural Sciences

1. **BS Biology**  
   Biology BS  
   Major Reqmts-Course(s) Added  
   Support_Lin  
   8 Term Plan:  
   BS Biology 8 term plan

2. **Content Emphasis in Mathematics**  
   Fall 2010  
   Elementary Education BSED  
   Major Reqmts-Course(s) Deleted, Major Reqmts-Unit Change  
   Support_Lin  
   8 Term Plan:

D. The College of Health and Human Services

1. **BS Health Sciences**  
   Health Sciences: Public Health BS  
   Major Reqmts-Course(s) Deleted  
   Support_Lin  
   8 Term Plan:

III. Action Items

<table>
<thead>
<tr>
<th>Effective Date/ Revised Effective Date</th>
<th>Summary of Changes</th>
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</table>

A. College of Arts and Letters – item removed by college, to be on 4/27/10 UCC agenda.

1. **MUS 396**  
   MUS 396  
   3 The Broadway Musical: A Study of Musical Theater from an Artistic, Historical, and Cultural Perspective  
   New Course

B. The College of Social and Behavioral Sciences – all items approved as presented.

1. **COM 201**  
   COM 201  
   9 Independent Filmmaking Storytelling  
   New Course

2. **COM 202**  
   COM 202  
   7 Independent Filmmaking Production Techniques  
   New Course
3. **COM 210**
   COM 210 6 Independent Filmmaking Project

4. **Minor in Independent Filmmaking**

---

**C. The College of Health and Human Services – item removed by department- need syllabus to move forward.**

1. **NTS 256R**
   NTS 256R 1 Medical Nutrition Recitation

---

**D. The College of Education – item approved by UCC w/a change to the Math emphasis to be that which was approved in item II. C 2.**

1. **B.S. Ed. in Elementary Education**
   Elementary Education BSED Fall 2010
   Major Reqmts-Course(s) Added,
   Major Reqmts-Course(s) Deleted,
   Subplan Reqmts-Course(s) Deleted Support
   Support 8 Term
1. Course deletion effective at the end of what term and year?  

2. College  CAL  3. Academic Unit/Department  PHI  

4. Current course subject and catalog number  342H  

5. Current catalog title  
CONTEMPORARY ANALYTIC PHILOSOPHY - HONORS  

6. Is this a Liberal Studies Course or Diversity Course?  Liberal Studies  Diversity  Both  

7. Is this course currently cross listed or co-convened?  Yes  ☑  No  ☐  
If yes, list course  342W  

8. Is course an elective?  ☑  or required for an academic plan/subplan?  ☐  
If required, for what academic plan/subplan?  
If required, also submit Proposal for Plan Change.  

9. Is this course required or an elective in any other plan?(major, minor, certificate)  yes  ☐  no  ☑  
If yes, explain in the justification and provide supporting documentation from the affected departments.  

10. Does this change affect community college articulation?  Yes  ☐  No  ☑  
If yes, explain how in the justification and provide supporting documentation from the affected institutions.  

Is the course a Common Course as defined by your Articulation Task Force?  Yes  ☐  No  ☑  
If yes, has the changed been approved by the Articulation Task Force?  Yes  ☐  No  ☑  
If this course is listed in the Course Equivalency Guide, should the listing be  
changed to departmental elective credit  ☑  OR  changed to elective credit  ☐  

11. Justification for course deletion.  
The department is reallocating available teaching to new course in proposed PPL program.  

12. Approvals  

[Signatures and dates]  

Department Chair/Unit Head (if appropriate)/ Date  
Chair of college curriculum committee/ Date  
Dean of college/Date  

Revised 9/07

   Fall 2011

2. College  CAL  3. Academic Unit/Department  PHI

4. Current course subject and catalog number  342W

5. Current catalog title
   CONTEMPORARY ANALYTIC PHILOSOPHY

6. Is this a Liberal Studies Course or Diversity Course?  Liberal Studies ☐  Diversity ☐  Both ☐

7. Is this course currently cross listed or co-convened?  Yes ☒  No ☐
   If yes, list course  342H

8. Is course an elective?  ☒  or required for an academic plan/subplan?  ☐
   If required, for what academic plan/subplan?  
   If required, also submit Proposal for Plan Change.

9. Is this course required or an elective in any other plan? (major, minor, certificate)  yes ☐  no ☒
   If yes, explain in the justification and provide supporting documentation from the affected departments.

10. Does this change affect community college articulation?  Yes ☐  No ☒
    If yes, explain how in the justification and provide supporting documentation from the affected institutions.

11. Justification for course deletion.
    The department is reallocating available teaching to new course in proposed PPL program.

12. Approvals

   George ✔  4-13-10
   Department Chair/Unit Head (if appropriate)/ Date

   Jim ☒  4-13-10
   Chair of college curriculum committee/ Date

   Dean ☒  4-13-10
   Dean of college/Date

Revised 9/07
For Committee use only

For University Curriculum Committee/Date

Action taken: ☑ approved as submitted   □ approved as modified

Note: Submit original to associate provost's office

Revised 9/07
University Curriculum Committee
Proposal for new Academic Plan, Plan change, or Plan Deletion

<table>
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<tr>
<th>1. College</th>
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6. Is this proposal for a:
- [ ] New Plan
- [ ] Plan Change*
- [ ] New Subplan
- [ ] Subplan Change
- [ ] Plan Deletion
- [ ] Subplan Deletion

*Plan changes must be accompanied by an updated 8 semester plan.

7. ALL Education plans, please indicate NCATE Designation:
- [ ] Initial Plan
- [ ] Advanced Plan
- [ ] Remove Designation
- [ ] Change from Initial to Advanced Plan
- [ ] Change from Advanced to Initial Plan

8.

Revised 09/07
MINOR CINEMA AND VISUAL CULTURE STUDIES

To complete this minor you must take the following 21 units:

- CVC 101 Introduction to Cinema and Visual Culture
- 18 units selected from the following courses:
  - EMF 222 Introduction to Electronic Media, Film, and Entertainment
  - EMF 321 History of Entertainment I: Radio, Film, and Television from 1920s-1960s
  - EMF 322 History of Entertainment II: Radio, Film, and Television from 1960s-Present
  - CCJ 314 Hollywood and Crime
  - COM 382 The Art of Communication: Film
  - COM 383 Topics in Cinema
  - ENG 266 World Cinema: An Introduction
  - ENG 366 Film and/as Literature
  - ENG 467 Special Topics in World Cinema
  - ES 200 Race, Identity, and Film
  - HUM 370 Popular Arts: Film

MINOR CINEMA AND VISUAL CULTURE STUDIES

To complete this minor you must take the following 21 units:

- CVC 101 Introduction to Cinema and Visual Culture
- 18 units selected from the following courses:
  - CVC 100 15 Screenings: Film and the Big Screen Experience
  - EMF 222 Introduction to Electronic Media, Film, and Entertainment
  - EMF 321 History of Entertainment I: Radio, Film, and Television from 1920s-1960s
  - EMF 322 History of Entertainment II: Radio, Film, and Television from 1960s-Present
  - CCJ 314 Hollywood and Crime
  - COM 382 The Art of Communication: Film
  - COM 383 Topics in Cinema
  - ENG 266 World Cinema: An Introduction
  - ENG 366 Film and/as Literature
  - ENG 467 Special Topics in World Cinema
  - ES 200 Race, Identity, and Film

Revised 09/07
- HUM 380 Humanistic Values in Postwar Cinema
- HUM 382 World Perspectives in Humanities: Latin American Film
- HUM 383 Topics in World Cinema
- PHI 325 Ethics in Film
- REL 265 Religion and Film
- WLLC 141 Introduction to German Cinema

Be aware that some of the courses required for your minor may have prerequisites that you must also take. Check the courses in the appropriate subject.

- HUM 370 Popular Arts: Film
- HUM 380 Humanistic Values in Postwar Cinema
- HUM 382 World Perspectives in Humanities: Latin American Film
- HUM 383 Topics in World Cinema
- PHI 325 Ethics in Film
- REL 265 Religion and Film
- WLLC 141 Introduction to German Cinema

Be aware that some of the courses required for your minor may have prerequisites that you must also take. Check the courses in the appropriate subject.

9. For undergraduate plans, will this requirement be a student individualized plan*? X no ☐ yes
* A Student Individualized Plan is an academic requirement that varies by student, such as the 15-unit BAILS focus, for which coursework requirements are established by the student in consultation with the advisor.

If yes, the academic unit listed at the top of this form hereby takes responsibility for providing complete information about each student's individual requirements for the degree audit system.

10. For undergraduate plans, will a milestone** be used to:
   ☐ a. verify satisfactory completion of a non course requirement.
   ☐ b. indicate admission to a major.
   X c. will not be used.

**A Milestone is used to record noncourse requirements, such as the HRM 800-hour work experience requirement or admission to Business Major status.

If yes, the academic unit listed at the top of this form hereby takes responsibility for maintaining the milestone and keeping individual student records up to date.


N/A

12. Justification for proposal. Please indicate how past assessments of student learning prompted proposed changes.

The growth of film classes at NAU and universities nationwide has led to the development of a minor in Cinema and Visual Culture. The purpose of CVC 100, a one credit course which can be repeated up to 3 credits, is to introduce students to classic and contemporary feature films in a theatrical venue with other audience members. Students will participate in a semester-long film series and/or various film festivals and screenings throughout the semester. Students will develop cinematic analytical and evaluative skills by attending public screenings, writing informed responses, and participating in online and/or in-person discussions with other audience members, special guests and the instructor.

Revised 09/07
13. If this academic plan/subplan will require additional faculty, space, or equipment, how will these requirements be satisfied?
   N/A

14. Will this academic plan/subplan affect other majors, liberal studies course offerings, plans/subplans, curricula, or enrollment at NAU?
   If so, attach supporting documentation from the affected departments/units and college dean.
   No.

15. Will present library holdings support this academic plan/subplan?
   Yes.

Certifications

[Signatures and dates]

For committee use only

[Signatures and dates]

Action taken: __ approved as submitted __ approved as modified

Revised 09/07
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Revised 2/19/10
7. For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the current online academic catalog: [http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.html](http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.html)

Be sure you include all catalog text that pertains to this plan change.

For New Plans, leave this column blank.

This minor provides you with an understanding of the theory and practice central to the study of museums and museum careers.

To satisfy this minor you take the following 18 units, earning a grade of “C” or better in all 18 units. In addition, at least 9 units must be taken at NAU.

1. Complete ARH 350 and ARH 360 for 6 units.

2. 3 units of related coursework selected in consultation with your major advisor (approved courses include ART 301; ARH 351, 353, 355, 356, 361, 430; ANT 205, 351, 365, 407C, 459; AIS 201, 232, 460; HUM 395)

3. 9 units of either MST 408 (the Internship track) OR 6 units of MST 408 and 3 units of MST 497 (the Project Track).

The Internship track involves work as an intern in a gallery, museum, or appropriate institution:

Internship Track:
9 units of MST 408

The Project track includes work as an intern and the completion of a research paper on museums and/or museology, an exhibition, or some other appropriate endeavor (e.g., an archival or registrarial project) approved by the minor’s advisor which will synthesize classroom and real world experiences.

Project Track:
6 units of MST 408
3 units of MST 497

Be aware that some of the courses required for this minor may have prerequisites that you must also take. Check the courses in the appropriate subject.

Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing and strikethrough what is being deleted.
(Describe the changed requirements under headings that match those used in the left column. Please be aware that if the units are not totaled correctly, the catalog editor will adjust them accordingly.)

This minor provides you with an understanding of the theory and practice central to the study of museums and museum careers.

To satisfy this minor you take the following 18 units, earning a grade of “C” or better in all 18 units. In addition, at least 9 units must be taken at NAU.

1. Complete ARH 350 and ARH 360 for 6 units.

2. 3 units of related coursework selected in consultation with your major advisor (approved courses include ART 301; ARH 250, 351, 353, 355, 356, 361, 430; ANT 205, 351, 365, 407C, 459; AIS 201, 232, 460; HUM 395)

4. 9 units of either MST 408 (the Internship track) OR 6 units of MST 408 and 3 units of MST 497 (the Project Track).

The Internship track involves work as an intern in a gallery, museum, or appropriate institution:

Internship Track:
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Project Track:
6 units of MST 408
3 units of MST 497

Be aware that some of the courses required for this minor may have prerequisites that you must also take. Check the courses in the appropriate subject.

8. For undergraduate plans, will this requirement be a student individualized plan? □ no □ yes

*"A Student Individualized Plan is an academic requirement that varies by student, such as the 15-unit BAILS focus, for which coursework requirements are established by the student in consultation with the advisor.

Revised 2/19/10
If yes, the academic unit listed at the top of this form hereby takes responsibility for providing complete information about each student's individual requirements for the degree audit system.

9. For undergraduate plans, will a milestone** be used to:
   - [ ] a. verify satisfactory completion of a non course requirement.
   - [X] b. indicate admission to a major.
   - [ ] c. will not be used.

   **A Milestone is used to record noncourse requirements, such as the HRM 800-hour work experience requirement or admission to Business Major status.

   If yes, the academic unit listed at the top of this form hereby takes responsibility for maintaining the milestone and keeping individual student records up to date.


N/A

11. Justification for proposal. Please indicate how past assessments of student learning prompted proposed changes.

   There is significant interest in museum studies, as healthy enrollment in existing NAU courses on the topic (ARH 350 and 360) show. We have added a lower-division museum studies course so a wider range of students may gain exposure to the topic and become aware of the opportunities that this field of study offers. This course is now one of the 3 units of related coursework available to minors in the program.

12. If this academic plan/subplan will require additional faculty, space, or equipment, how will these requirements be satisfied?

N/A

13. Will this academic plan/subplan affect other majors, liberal studies course offerings, plans/subplans, curricula, or enrollment at NAU?

   If so, attach supporting documentation from the affected departments/units and college dean.

N/A

14. Will present library holdings support this academic plan/subplan?

N/A

Certifications

Department Chair/Unit Head (if appropriate)  

[Signature]  

Date 2/19/2010

Chair of college curriculum committee  

Date

Dean of college  

Date

For committee use only

[Signature]  

Date 4/27/10

For University Curriculum Committee  

Action taken: □ approved as submitted □ approved as modified

Revised 2/19/10
University Curriculum Committee
Proposal for Course Change

1. Is this course a Diversity or Liberal Studies Course? Liberal Studies □ Diversity □ Both □


3. College CEFNS

4. Academic Unit/Department Chemistry & Biochemistry

5. Current course subject/catalog number CHM442

6. Current catalog title, course description and units. (Cut and paste from current on-line academic catalog)

CHM 442C PHYSICAL CHEMISTRY II (3)
Introduces quantum and statistical mechanics, group theory, and spectroscopy. Prerequisite: CHM 341 and Prerequisite or Corequisite: MAT 238

Enrollment Requirements
Prerequisite: CHM 341 and Prerequisite or Corequisite: MAT 238

Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing.

CHM 442C PHYSICAL CHEMISTRY II (3)
Introduces quantum and statistical mechanics, group theory, and spectroscopy. Prerequisite: CHM 341 and Prerequisite or Corequisite: MAT 238. May be co-convened with: CHM540.

Enrollment Requirements
Prerequisite: CHM 341 and Prerequisite or Corequisite: MAT 238

7. Is this course required or an elective in any other plan (major, minor, certificate)? Yes □ No ☒
   If yes, explain and provide supporting documentation from the affected departments.

8. Does this change affect community college articulation? Yes □ No ☒
   If yes, explain how in the justification and provide supporting documentation from the affected institutions.

Revised 8/08
Is the course a Common Course as defined by your Articulation Task Force? Yes □ No □
If yes, has the change been approved by the Articulation Task Force? Yes □ No □
If this course has been listed in the Course Equivalency Guide, should that listing
be left as is □ or be revised □
If revised, how should it be revised? ______

**IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING**

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<thead>
<tr>
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<tr>
<td>Current course subject/catalog number</td>
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</tr>
<tr>
<td>Current number of units/credits</td>
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<td>Current Course Fee yes □ no □</td>
<td>If subject or catalog number change</td>
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<td>Current Grading Option*</td>
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<tr>
<td>Letter Grade □ Pass/Fail □ or Both □</td>
<td>Letter Grade □ Pass/Fail □ or Both □</td>
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<tr>
<td>Current Repeat for additional Units</td>
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<tr>
<td>Current Max number of units</td>
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<td>Current Co-requisite</td>
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<td>Current Co-Convene with</td>
<td>Proposed Co-Convene with</td>
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<td>CHM540</td>
<td>Proposed Cross List with</td>
</tr>
<tr>
<td>Do you want to remove this course from either the Liberal Studies Course list and or the Diversity Course list? Liberal Studies □ Diversity □</td>
<td></td>
</tr>
</tbody>
</table>

9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

The topics covered in CHM442C are highly appropriate and desirable for students in our Master's program. Similar topics have historically been taught at the graduate level in CHM540. However, the enrollments in CHM540 fall short of the 8-student minimum. The most efficient manner to offer this important material to our undergraduate and graduate students is to co-convene these two courses. The students in CHM540 will use a graduate-level text while the students in CHM442C will use a standard undergraduate text. Each class will be assigned readings and problems from their respective texts. The classes will take different exams.

10. Approvals
CHM442C  Physical Chemistry II
3 credit hours (45 contact hours)

SPRING 2008

INSTRUCTOR: Dr. Cynthia J. Hartzell

OFFICE HOURS: Tuesday 11:00 am – noon
Thursday 3:50 pm – 5:30 pm
or by appointment (best to arrange by email)

College of Engineering, Forestry and Natural Sciences
Department of Chemistry and Biochemistry
Office: Wettaw Building (Bldg 88), Room 105B
Email: Cynthia.Hartzell@nau.edu

PREREQUISITES: CHM 341 and MAT 238 (Pre or Co-requisite)

COURSE DESCRIPTION: Introduces quantum and statistical mechanics and spectroscopy.

CAPSTONE AND ACS REQUIREMENTS.
This course meets NAU’s requirements for a Senior Capstone and specifically addresses the following essential skill: quantitative reasoning. To assess student learning of this skill, students will be asked to do the following:

- complete weekly homework assignments that require the application of differential and integral calculus to solve problems in quantum mechanics, spectroscopy and statistical mechanics
- apply the skills learned on the homework assignments to solve problems on three written hour exams
- apply the skills learned during the semester to solve problems on a comprehensive final exam

This course also meets ACS requirements for an in-depth course. As such, the course builds on prerequisite foundation course work. The goals of this course are both to integrate topics introduced in foundation courses and to investigate these topics more thoroughly. Exams and other assignments will be used to assess students’ depth of knowledge of core concepts and their ability to think critically and solve problems.

STUDENT LEARNING EXPECTATIONS/OUTCOMES FOR THIS COURSE:

- Students will learn to apply differential and integral calculus to solve problems in quantum mechanics
- Students will understand that the quantum mechanical wavefunction contains all information on a system
- Students will demonstrate the ability to apply the postulates of quantum mechanics to solve for energies, average distances and probable distances in a few model systems: particle in a box, harmonic oscillator and the rigid rotor
- Students will apply the energy equations of model systems to predict spectroscopic transitions in rotational and vibrational spectroscopy
- Students will apply their knowledge of angular momenta to predict the fine structure in electronic spectra
- Students will develop an appreciation that spectroscopy is the practical implementation of quantum mechanics in chemistry
- Students will exploit their knowledge of the language of quantum mechanics to understand the language of computational chemistry
- Students will develop an appreciation that quantum mechanics is necessary to explain the world around us.


Revised 8/08
CHAPTER     DATES
1.1 - 1.7    Jan 11 - 13  Blackbody Radiation, Photoelectric Effect, Bohr’s Atomic Theory
De Broglie Hypothesis
2.1 - 2.8    Jan 15 - 20  Classical waves; Quantum Mechanical Waves and the Schrödinger
Equation; Operators, Observables, Eigenfunctions, and Eigenvalues
3.1 - 3.5    Jan 22  The Postulates of Quantum Mechanics
4.1 - 4.4    Jan 25 - 27  Free Particle, Particle in a Box, Particle in a 3D box
5.1 - 5.5    Jan 29  Particle in a Real Box; Tunneling

EXAM           Chapters 1 - 5
Feb 3
6.1, 6.4      Feb 5  Commutation Relations; Heisenberg Uncertainty Principle
7.1 - 7.8      Feb 8 - 10  Quantum Mechanical Models for Vibration and Rotation of Molecules
8.1 - 8.9      Feb 12 - 17  Vibrational and Rotational Spectroscopy of Diatomic Molecules
9.1 - 9.6      Feb 19 - 26  Solving the Schrödinger Equation for the Hydrogen Atom;
Hydrogen Atom Orbitals

EXAM           Chapters 6 - 9
Mar 3
10.1 - 10.6   Mar 5 - 10  Many-electron Atoms; Electron Spin; Variation Method; Hartree-Fock
11.1 - 11.5   Mar 12 - 24  Good Quantum Numbers; Energy of a Configuration; Spectroscopy of Atoms
12.1 - 12.10  Mar 26 - 31  Hydrogen Molecule Ion; Hydrogen Molecule;
Molecular Orbitals of Diatomic Molecules
14.1 - 14.8   April 2  Electronic Spectroscopy of Molecules

EXAM           Chapters 10 - 14
April 7
13.7, 15     Apr 9 - 14  Introduction to Computational Chemistry: Semi-empirical methods, Hartree-Fock

Thermo Text
13        Apr 16  Boltzmann Distribution
14        Apr 19 - 21  Molecular Partition Functions; High-temperature Limit
15        Apr 23 - 26  Statistical Thermodynamics; Energy; Heat Capacity
        Apr 28 - 30  Review

FINAL EXAM  Monday, May 3  12:30 - 2:30 pm  Covers material from the entire semester

ASSESSMENT OF STUDENT LEARNING OUTCOMES.
The learning outcomes listed above will be assessed using questions on homeworks, hour exams and a comprehensive final exam.
Questions will build in complexity over the course of the semester but will rely on an accumulation of knowledge and skills.

HOMEWORK IS DUE AT THE BEGINNING OF CLASS ON FRIDAYS. Solutions will be posted on the Bb Vista shell for this course at //vista.nau.edu. Click on the folder labeled Homework Solutions, then click on a file to download.

Late homework will not be accepted. If you plan to miss class on the due date, hand in your homework early. If you
miss class unexpectedly due to illness or family emergency, you will be excused from the assignment. In this case, your
grade will be based on your other homework grades. Please send me an email (or phone me) to let me know that you
are ill and will be missing an assignment.

ASSIGNED READINGS. The lectures are not designed to take the place of the assigned reading. The purpose of the lectures is
to highlight and clarify the material given in the text.

GRADING

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SCALE

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<td>B</td>
<td>80 - 89%</td>
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Revised 8/08
<table>
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<th>Course</th>
<th>Points</th>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
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<td>C</td>
<td>65 - 79%</td>
</tr>
<tr>
<td>Homework</td>
<td>100</td>
<td>D</td>
<td>50 - 64%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td></td>
<td></td>
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</tbody>
</table>

**Make-up Exams:** There are no make-up exams. If you miss an hour exam due to an excused absence (illness, family emergency, institutional excuse), your grade will be based on the other hour exams, the final exam and the homework. Please send me an email (or phone me) to let me know that you are ill and will be missing an exam.

**Note Regarding H1N1 Precautions:** While the importance of class attendance is emphasized above, please be cautious about attending class if you are feeling ill. Please inform me by email (or phone) if you are feeling unwell.

*If you are experiencing flu-like symptoms, you should not attend class.* Please take precautions not to infect others. Seek medical attention if your symptoms worsen.

**Drop:**
The University deadline for dropping a class without the class appearing on transcript is February 5.
The University deadline for dropping a class with a W is March 12.
All paperwork for dropping a class must be completed by the published deadline.

For academic policy statements see: http://jan.ucc.nau.edu/academicadmin/policy.doc

Revised 8/08
CHMS40 Theoretical Chemistry

3 credit hours (45 contact hours)

SPRING 2010

INSTRUCTOR: Dr. Cynthia J. Hartzell

Office: Wettaw Building (Bldg 88), Room 105B

OFFICE HOURS: Tuesday 11:00 am – noon
Thursday 3:50 – 5:30 pm
or by appointment (best to arrange by email)

PREREQUISITES: CHM 341 and MAT 238 (Recommended but not required)

COURSE DESCRIPTION: Advanced concepts in theoretical chemistry that may include quantum chemistry, spectroscopy, chemical kinetics, classical and statistical thermodynamics.

TEXT: Molecular Quantum Mechanics, 4th Edition, by Peter Atkins and Ronald Friedman, Oxford University Press:
This book is intended for a graduate course in quantum chemistry

RECOMMENDED REFERENCES:


CHMS40 CO-CONVENE WITH CHM442C

CHM540 is a graduate level course that is co-convened with the upper-division undergraduate capstone course CHM442C. Students in CHM540 will study a graduate level text that presents topics in an order that is consistent with the scheduled lecture topics. The lectures are designed to be relevant to students in both classes. The CHM540 text covers topics in depth and with mathematical sophistication. Students in CHM540 can expect extensive reading assignments from the text and from other references. Assigned homework problems from the graduate-level text will challenge students to apply the concepts studied in the assigned readings. During the last two weeks of the course, CHM540 students will apply the vocabulary and concepts of quantum mechanics to carry out a computational chemistry study using the software SPARTAN. Students will report the computational methods applied, and the results obtained, in a written paper. CHM540 students will be required to arrange up to three one-hour meetings with the instructor outside of scheduled class time during this two week period. Separate hour exams and final exams will be given in CHM540 and CHM442C.

STUDENT LEARNING EXPECTATIONS/OUTCOMES FOR THIS COURSE

- Students will demonstrate the ability to apply differential and integral calculus to solve advanced problems in quantum mechanics.
- Students will understand that the quantum mechanical wavefunction contains all information on a system.
- Students will demonstrate the ability to apply the postulates of quantum mechanics to solve for energies, average distances and probable distances in model systems: particle in a box, harmonic oscillator and the rigid rotor.
- Students will develop an appreciation that spectroscopy is the practical implementation of quantum mechanics in chemistry.
- Students will apply the energy equations of model systems to predict spectroscopic transitions in rotational and vibrational spectroscopy.
- Students will demonstrate the ability to apply the postulates of quantum mechanics to solve for energies, average distances and probable distances in the hydrogen atom.
- Students will apply their knowledge of angular momenta to predict the fine structure in electronic spectra.
- Students will demonstrate the ability to apply approximation methods to solve for energies of molecules.
- Students will exploit their knowledge of the vocabulary of quantum mechanics to learn the language and methods of computational chemistry.
• Students will carry out a computational chemistry study and explain the methods and results in a written report.

ASSESSMENT OF STUDENT LEARNING OUTCOMES

To assess student learning, students will be asked to do the following:

• complete weekly homework assignments that require the application of differential and integral calculus to solve graduate level problems in quantum mechanics and spectroscopy.
  These assignments will be evaluated by the instructor to assess the extent to which students are grasping the concepts and to assess students’ facility with applying the tools of calculus to solve problems.

• apply the skills learned on the homework assignments to solve problems on two written hour exams specific for this graduate course.
  When grading the exams, the instructor will provide feedback to the students to help improve their understanding of the concepts and the methods.

• apply the skills, knowledge and vocabulary learned to carry out an independent computational study. A paper will be submitted that describes in detail the computational methods used and the results that were obtained.
  The instructor will evaluate the papers for understanding of the underlying concepts of computational chemistry as well as for skill at working through the experimental steps to reach a logical conclusion.

• apply the skills learned during the semester to solve problems on a comprehensive final exam specific for this graduate course.
  This is the third opportunity to assess student understanding of the concepts and student facility with the application of calculus to relevant problems. This assessment will be compared with the assessment of homeworks and hour exams to obtain a measure of the evolution of student understanding and skill.

SCHEDULE OF LECTURE TOPICS, READING ASSIGNMENTS AND EXAMS:

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>DATES</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>Jan 11 – 13</td>
<td>Blackbody Radiation, the Photoelectric Effect, Atomic Spectra the de Broglie Relation</td>
</tr>
<tr>
<td>1.1 – 1.23</td>
<td>Jan 15 – 22</td>
<td>Operators, Postulates of Quantum Mechanics, the Schrödinger Equation, Hermitian Operators, the Uncertainty Principle, Matrices in Quantum Mechanics</td>
</tr>
<tr>
<td>2.1 – 2.15</td>
<td>Jan 25 – 29</td>
<td>Translational Motion, Penetration into Non-classical Regions, Wavepackets Tunneling, Particle in a Box</td>
</tr>
<tr>
<td>EXAM</td>
<td>Feb 3</td>
<td>INTRODUCTION thru Chapter 2.15</td>
</tr>
<tr>
<td>2.16 – 2.18</td>
<td>Feb 5</td>
<td>Quantum Mechanical Model for Vibration of Molecules</td>
</tr>
<tr>
<td>3.1 – 3.8</td>
<td>Feb 8 – 10</td>
<td>Quantum Mechanical Model for Rotation of Molecules</td>
</tr>
<tr>
<td>10.1 – 10.11</td>
<td>Feb 12 – 17</td>
<td>Vibrational and Rotational Spectroscopy of Diatomic Molecules</td>
</tr>
<tr>
<td>3.9 – 4.7</td>
<td>Feb 19 – 26</td>
<td>Solving the Schrödinger Equation for the Hydrogen Atom Angular Momentum Operators and Commutation Relations, Shift Operators</td>
</tr>
<tr>
<td>EXAM</td>
<td>Mar 3</td>
<td>Chapters 2.16 - 4, 10</td>
</tr>
<tr>
<td>7.1 – 7.21</td>
<td>Mar 5 – 24</td>
<td>Atomic Spectra, Many-electron Atoms; Electron Spin; Term Symbols</td>
</tr>
<tr>
<td>8.1 – 8.8</td>
<td>Mar 26 – 31</td>
<td>Hydrogen Molecule Ion; Molecular Orbital Theory, Hydrogen Molecule; Molecular Orbitals of Diatomic Molecules</td>
</tr>
<tr>
<td>11.1 – 11.5</td>
<td>April 2 – 5</td>
<td>Electronic Spectroscopy of Molecules</td>
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<tr>
<td>Apr 30</td>
<td>Review</td>
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</tbody>
</table>
FINAL EXAM  Monday, May 3  12:30 – 2:30 pm  Covers material from the entire semester

PAPER. Students will carry out an individual computational chemistry study and present the methods and results in a written report. The purpose of the project is to give students the opportunity to apply the vocabulary of words and concepts in quantum mechanics to a methodology of importance to contemporary chemists. In the twelfth week of class, students will be introduced to the computational software Spartan which is on the Chemistry Department server. In consultation with the student, the instructor will assign a computational project that is relevant to the research interests of the student and appropriate for the scope of the course. Students will devote two weeks to completing the study and writing a paper. The paper will include a description of the methods used, the justification for those methods, the results obtained and an analysis of the results. The paper is due on April 28.

HOMEWORK IS DUE AT THE BEGINNING OF CLASS ON FRIDAYS. Homework assignments will be given out in class on Fridays and are due in one week. Solutions will be posted on the Bb Vista shell for this course at //vista.nau.edu. Click on the folder labeled Homework Solutions, then click on a file to download.

Late homework will not be accepted. If you plan to miss class on the due date, hand in your homework early. If you miss class unexpectedly due to illness or family emergency, you will be excused from the assignment. In this case, your grade will be based on your other homework grades. Please send me an email (or phone me) to let me know that you are ill and will be missing an assignment.

ASSIGNED READINGS. Assigned readings from the graduate text and from other references present the material that students are expected to study in this course. The purpose of the lectures is to highlight and clarify the material given in the assigned readings.

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<tr>
<th>GRADING</th>
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<th>SCALE</th>
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<tr>
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<td>(100 pts each)</td>
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<td>B 80 - 89%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>200 pts</td>
<td>C 65 - 79%</td>
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<td>Paper</td>
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<td>Total</td>
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</table>

MAKE-UP EXAMS: A make-up exam will be scheduled if you miss an hour exam due to an excused absence (illness, family emergency, institutional excuse). Please send me an email (or phone me) to let me know if you are ill and will be missing an exam.

DROP:
The University deadline for dropping a class without the class appearing on transcript is February 5. The University deadline for dropping a class with a W is March 12. All paperwork for dropping a class must be completed by the published deadline.

For academic policy statements see: http://jan.ucc.nau.edu/academicadmin/policy.doc
University Curriculum Committee
Proposal for Course Change

1. Is this course a Diversity or Liberal Studies Course?  Liberal Studies ☒ Diversity ☐ Both ☐


5. Current course subject/catalog number  MAT 131

6. Current catalog title, course description and units. (Cut and paste from current on-line academic catalog)
   www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm).

   MAT 131 TOPICS IN CALCULUS  (3-4)
   Introductory topics in differential and integral calculus with applications. Letter grade only. Prerequisite: MAT 108 or MAT 110 or MAT 119 with grade greater than or equal to C or Math Placement Test Results (ACT 25+; Accuplacer 70+; PLACE 65+; SATI 580+) or International Exchange Student Group SAS

   MAT 131 TOPICS IN CALCULUS  (3)
   Introductory topics in differential and integral calculus with applications. Letter grade only. Prerequisite: MAT 108 or MAT 110 or MAT 119 with grade greater than or equal to C or Math Placement Test Results (ACT 25+; Accuplacer 70+; PLACE 65+; SATI 580+) or International Exchange Student Group SAS

7. Is this course required or an elective in any other plan (major, minor, certificate)?  Yes ☒ No ☐
   If yes, explain and provide supporting documentation from the affected departments.
   It is required in the Bachelor of Business Administration and is in lists of choices for several other programs, especially business majors. The change is only a change on paper which will not affect any other programs in any way.

8. Does this change affect community college articulation?  Yes ☐ No ☒
   If yes, explain how in the justification and provide supporting documentation from the affected institutions.

   Is the course a Common Course as defined by your Articulation Task Force?  Yes ☐ No ☒
   If yes, has the change been approved by the Articulation Task Force?  Yes ☐ No ☐

   If this course has been listed in the Course Equivalency Guide, should that listing be left as is ☒ or be revised ☒

   If revised, how should it be revised?  MAT 131 (3) and Elective (1)

Revised 8/08
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<td>If subject or catalog number change Move [ ] or Delete [ ]</td>
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<td>Current Grading Option* Letter Grade [ ] Pass/Fail [ ] or Both [ ]</td>
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<tr>
<td>Current Repeat for additional Units</td>
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<td>Current Cross List with</td>
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Do you want to remove this course from either the Liberal Studies Course list and or the Diversity Course list? Liberal Studies [ ] Diversity [ ]

9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

The course has been taught as a 3 hour course since at least 1999. This change brings the catalog copy in line with actual practice.

10. Approvals

Janet M. McShane 15 March 2010

Department Chair/Unit Head (if appropriate)/ Date

Peggy Potter 3/31/10

Chair of college curriculum committee/Date

Dean of college/Date

For Committee use only

For University Curriculum Committee/Date

Action taken: ✓ approved as submitted approved as modified

Revised 8/08
1. Is this course a Diversity or Liberal Studies Course? Liberal Studies ☒ Diversity ☐ Both ☐


5. Current course subject/catalog number MAT 155

6. Current catalog title, course description and units. (Cut and paste from current on-line academic catalog)

   MAT 155 PRINCIPLES OF MATHEMATICS II (3)

   Mathematical principles and processes underlying mathematics instruction in grades K-8; geometry and measurement; statistics and probability. Letter grade only. Course fee required. Prerequisite: MAT 150 with a grade greater than or equal to C or Math Placement Test Results (ACT 22+; Accuplacer 60+; PLACE 55+; SATI 520+) FNRQ

   MAT 155 PRINCIPLES OF MATHEMATICS II (3)

   Mathematical principles and processes underlying mathematics instruction in grades K-8; geometry and measurement; statistics and probability. Letter grade only. Course fee required. Prerequisite: MAT 150 with a grade greater than or equal to C or Math Placement Test Results (ACT 22+; Accuplacer 60+; PLACE 55+; SATI 520+) FNRQ

7. Is this course required or an elective in any other plan (major, minor, certificate)? Yes ☒ No ☐ If yes, explain and provide supporting documentation from the affected departments. Required in Elementary Education BS Ed and several other BS Ed programs. The change will not affect other programs.

8. Does this change affect community college articulation? Yes ☐ No ☒ If yes, explain how in the justification and provide supporting documentation from the affected institutions.

   Is the course a Common Course as defined by your Articulation Task Force? Yes ☒ No ☐ If yes, has the change been approved by the Articulation Task Force? Yes ☐ No ☒ The change does not affect the articulation agreements.

   If this course has been listed in the Course Equivalency Guide, should that listing be left as is ☒ or be revised ☐

   If revised, how should it be revised? ________

Revised 8/08
<table>
<thead>
<tr>
<th>CURRENT</th>
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<tbody>
<tr>
<td>Current course subject/catalog number</td>
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</tr>
<tr>
<td>Current number of units/credits</td>
<td>Proposed number of units/credits</td>
</tr>
<tr>
<td>Current Course Fee yes [ ] no [ ]</td>
<td>If subject or catalog number change Move [ ] or Delete [ ]</td>
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<tr>
<td>Current Grading Option*</td>
<td>Proposed Grading Option*</td>
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<tr>
<td>Letter Grade [ ] Pass/Fail [ ] or Both [ ]</td>
<td>Letter Grade [ ] Pass/Fail [ ] or Both [ ]</td>
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<tr>
<td>Current Repeat for additional Units</td>
<td>Proposed Repeat for additional Units</td>
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<tr>
<td>Current Max number of units</td>
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<tr>
<td><strong>Current Prerequisite</strong></td>
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<td>MAT 150 with a grade greater than or equal to C or Math Placement Test Results (ACT 22+; Accuplacer 60+; PLACE 55+; SATI 520+)</td>
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<tr>
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<td>Current Co-Convene with</td>
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<tr>
<td>Current Cross List with</td>
<td>Proposed Cross List with</td>
</tr>
<tr>
<td>Do you want to remove this course from either the Liberal Studies Course list and or the Diversity Course list? Liberal Studies [ ] Diversity [ ]</td>
<td></td>
</tr>
</tbody>
</table>

9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

The proposed revision is the way the prerequisite appeared in the catalog before the current version (2009-2010), and reflects what the department wants the prerequisite to be. We don't know why the language was changed (we do not have any record of it in curricular changes), but the revised language in the 2010 catalog includes the option of entering the course via placement which is not allowed. From our perspective, we are simply changing the language to reflect what the official prerequisite should be.

10. Approvals

Janet M. McMahon 19 March 2010
Department Chair/Unit Head (if appropriate)/Date

Kerry Pollard 3/31/10
Chair of college curriculum committee/Date

Dean of college/Date

For Committee use only

For University Curriculum Committee/Date

Action taken: [ ] approved as submitted [ ] approved as modified
1. Is this course a Diversity or Liberal Studies Course? 
   - Liberal Studies [X] 
   - Diversity [ ] 
   - Both [ ]

2. Course change effective beginning of what term and year? 
   (ex. Spring 2008, Summer 2008) See effective dates calendar: 
   - Fall 2010

3. College: CEFNS

4. Academic Unit/Department: Mathematics & Statistics

5. Current course subject/catalog number: STA 270

6. Current catalog title, course description and units. (Cut and paste from current on-line academic catalog)
   - STA 270 APPLIED STATISTICS (3)
     Graphical and quantitative description of data; binomial, normal, and t distributions; one- and two-sample hypothesis tests and confidence intervals; simple linear regression and correlation. Credit cannot be earned in both STA 270 and STA 275. Letter grade only. 
     Course fee required. Prerequisite: MAT 102X with a grade greater than or equal to C or Math Placement Test Results (ACT 19+; Accuplacer 50+; PLACE 46+; SATI 470+) or International Exchange Student Group SAS

7. Is this course required or an elective in any other plan (major, minor, certificate)? 
   - Yes [ ] 
   - No [X]
   If yes, explain and provide supporting documentation from the affected departments.

8. Does this change affect community college articulation? 
   - Yes [ ] 
   - No [X]
   If yes, explain how in the justification and provide supporting documentation from the affected institutions.

   Is the course a Common Course as defined by your Articulation Task Force? 
   - Yes [ ] 
   - No [X]
   If yes, has the change been approved by the Articulation Task Force? 
   - Yes [ ] 
   - No [ ]

   If this course has been listed in the Course Equivalency Guide, should that listing be left as is [ ] or be revised [ ] N/A

   If revised, how should it be revised? ______

Revised 8/08
## IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING

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<thead>
<tr>
<th>CURRENT</th>
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<th>PROPOSED</th>
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<tr>
<td>Current course subject/catalog number</td>
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<td>Current number of units/credits</td>
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</tr>
<tr>
<td>Current Course Fee</td>
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<td>If subject or catalog number change</td>
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<tr>
<td>Current Grading Option*</td>
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<tr>
<td>Letter Grade ☐ Pass/Fail ☐ or Both ☐</td>
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<td>Current Max number of units</td>
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</tr>
</tbody>
</table>

**Current Prerequisite**
MAT 102X with a grade greater than or equal to C or Math Placement Test Results (ACT 19+; Accuplacer 50+; PLACE 46+; SATI 470+) or International Exchange Student Group

**Current Co-requisite**

**Current Co-Convene with**

**Current Cross List with**

**Do you want to remove this course from either the Liberal Studies Course list and or the Diversity Course list?**
- Liberal Studies ☐
- Diversity ☐

9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

The change is needed since completion of MAT 108 or MAT 114 certifies a higher level of preparation than MAT 102X, but the new placement system is not set to account for this.

## 10. Approvals

- Janet M. McShane 19 March 2010

Department Chair/ Unit Head (if appropriate)/ Date

- Peggy Deleh 3/31/10

Chair of college curriculum committee/Date

- 3/31/10

Dean of college/Date

For Committee use only

For University Curriculum Committee/Date

Action taken: ☑ approved as submitted ☑ approved as modified

Revised 8/08
1. Is this course a Diversity or Liberal Studies Course? Liberal Studies □ Diversity □ Both □


5. Current course subject/catalog number STA 275

6. Current catalog title, course description and units. (Cut and paste from current on-line academic catalog /www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm).

STA 275 STATISTICAL ANALYSIS (3)
A calculus-based applied statistics course. Descriptive statistics; discrete and continuous random variables; probability distributions including binomial, Poisson, normal and t-distributions; one- and two-sample hypothesis tests and confidence intervals; simple linear regression and correlation. Credit cannot be earned in both STA 270 and STA 275. Letter grade only. Prerequisite: MAT 131 or MAT 137 with a grade greater than or equal to C

STA 275 STATISTICAL ANALYSIS (3)
A calculus-based applied statistics course. Descriptive statistics; discrete and continuous random variables; probability distributions including binomial, Poisson, normal and t-distributions; one- and two-sample hypothesis tests and confidence intervals; simple linear regression and correlation. Credit cannot be earned in both STA 270 and STA 275. Letter grade only. Prerequisite: MAT 131 or MAT 137 136 with a grade greater than or equal to C

7. Is this course required or an elective in any other plan (major, minor, certificate)? Yes □ No ☒ If yes, explain and provide supporting documentation from the affected departments. Required in the BS Ed Mathematics and applies to emphases in the BSEExt Mathematics. The change will not affect any programs making use of the course.

8. Does this change affect community college articulation? Yes □ No ☒ If yes, explain how in the justification and provide supporting documentation from the affected institutions.

Is the course a Common Course as defined by your Articulation Task Force? Yes □ No ☒ If yes, has the change been approved by the Articulation Task Force? Yes □ No ☒ If this course has been listed in the Course Equivalency Guide, should that listing be left as is ☒ or be revised ☐

If revised, how should it be revised? _____

Revised 8/08
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</tbody>
</table>

**Current Prerequisite**
MAT 131 or MAT 137 with a grade greater than or equal to C

**Current Co-requisite**

**Current Co-Convene with**

**Current Cross List with**

Do you want to remove this course from either the Liberal Studies Course list and or the Diversity Course list? Liberal Studies [ ] Diversity [ ]

9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

The change makes the course more available without compromising the nature and content of the course.

10. Approvals

Janet M. McShane 15 March 2010

Department Chair/Unit Head (if appropriate)/Date

Peggy Rollins 3/31/10

Chair of college curriculum committee/Date

Dean of college/Date

For Committee use only

For University Curriculum Committee/Date

Action taken: [ ] approved as submitted [ ] approved as modified

Revised 8/08
University Curriculum Committee
Proposal for new Academic Plan, Plan change, or Plan Deletion

<table>
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<th>1. College</th>
<th>CEFNS</th>
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<tbody>
<tr>
<td>2. Academic Unit/Department</td>
<td>School of Forestry</td>
</tr>
<tr>
<td>3. Academic Plan Name</td>
<td>BSF Forestry</td>
</tr>
<tr>
<td>4. Subplan (if applicable)?</td>
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<tr>
<td>5. Effective Date</td>
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<table>
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<th>6. Is this proposal for a:</th>
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<tr>
<td>☐ New Plan</td>
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<tr>
<td>☒ Plan Change*</td>
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<td>☐ Plan Deletion</td>
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<tr>
<td>☐ New Subplan</td>
</tr>
<tr>
<td>☐ Subplan Change</td>
</tr>
<tr>
<td>☐ Subplan Deletion</td>
</tr>
</tbody>
</table>

*Plan changes must be accompanied by an updated 8 semester plan.

7. ALL Education plans, please indicate NCATE Designation:

☐ Initial Plan  ☐ Advanced Plan  ☐ Remove Designation

☐ Change from Initial to Advanced Plan  ☐ Change from Advanced to Initial Plan

8.
For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the current online academic catalog:
(http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm)
Be sure you include all catalog text that pertains to this plan change

For New Plans, leave this column blank.

**Preprofessional Requirements**
We devote the majority of the first two years of our unique curriculum to basic studies in the biological, natural, and social sciences and in quantitative and communication skills. When you satisfactorily complete these specified preprofessional courses, you have acquired the background necessary for our upper-division professional forestry program.

The preprofessional foundation consists of the following 48 units (or their equivalent for transfer students), which you must satisfactorily complete before you are eligible to enter the professional program:
- ENG 105 (4 units)
- MAT 125 and STA 270 (7 units)
- CHM 130 and 151L (5 units)
- BIO 181:181L and 182 (8 units)
- ECO 284 (3 units)
- CIS 120 (3 units)
- SC 111 (3 units)
- FOR 101, 211, 212, 213, 215, and 220 (15 units)

Please note that in preparation for these preprofessional courses, you should have at least three units of high school mathematics, including trigonometry, and one unit each of biology, chemistry, and physics when you enter our program.

Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing and strikethrough what is being deleted.
(Describe the changed requirements under headings that match those used in the left column. Please be aware that if the units are not totaled correctly, the catalog editor will adjust them accordingly.)

**Preprofessional Requirements**
We devote the majority of the first two years of our unique curriculum to basic studies in the biological, natural, and social sciences and in quantitative and communication skills. When you satisfactorily complete these specified preprofessional courses, you have acquired the background necessary for our upper-division professional forestry program.

The preprofessional foundation consists of the following 48 units (or their equivalent for transfer students), which you must satisfactorily complete before you are eligible to enter the professional program:
- ENG 105 (4 units)
- MAT 125 and STA 270 (7 units)
- CHM 130 and **151L, 130L** (5 units)
  or **CHM 151 and 151L (5 Units)**
- BIO 181:181L and 182 (8 units)
- ECO 284 (3 units)
- CIS 120 (3 units)
- SC 111 (3 units)
- FOR 101, 211, 212, 213, 215, and 220 (15 units)

Please note that in preparation for these preprofessional courses, you should have at least three units of high school mathematics, including trigonometry, and one unit each of biology, chemistry, and physics when you enter our preprofessional program.

Revised 09/07
preprofessional program. If you lack of any of these units, you may have to take remedial coursework.

program. If you lack of any of these units, you may have to take remedial coursework.

9. For undergraduate plans, will this requirement be a student individualized plan? X no ☐ yes
   *A Student Individualized Plan is an academic requirement that varies by student, such as the 15-unit BAILS focus, for which coursework requirements are established by the student in consultation with the advisor.

   If yes, the academic unit listed at the top of this form hereby takes responsibility for providing complete information about each student's individual requirements for the degree audit system.

10. For undergraduate plans, will a milestone** be used to:
    ☑ a. verify satisfactory completion of a non course requirement.
    ☑ b. indicate admission to a major.
    X c. will not be used.

   **A Milestone is used to record noncourse requirements, such as the HRM 800-hour work experience requirement or admission to Business Major status.

   If yes, the academic unit listed at the top of this form hereby takes responsibility for maintaining the milestone and keeping individual student records up to date.


   No changes to previous Learning Outcomes.

12. Justification for proposal. Please indicate how past assessments of student learning prompted proposed changes.

   The Chemistry and Biochemistry Department has recently instituted a new laboratory section for CHM 130 – Fundamental Chemistry – CHM 130L. This section is designed to replace CHM 151L for students taking CHM 130, which includes students in our forestry (B.S.F.) program. At the request of the Chemistry and Biochemistry Department, we are therefore proposing to change our degree requirements so that students take CHM 130L.

13. If this academic plan/subplan will require additional faculty, space, or equipment, how will these requirements be satisfied?

   There are no additional requirements.

14. Will this academic plan/subplan affect other majors, liberal studies course offerings, plans/subplans, curricula, or enrollment at NAU?

   If so, attach supporting documentation from the affected departments/units and college dean.

   Not to our knowledge.

15. Will present library holdings support this academic plan/subplan?

   Yes.

Revised 09/07
Certifications

Department Chair/Unit Head (if appropriate) J. Allen 4/2/10

Chair of college curriculum committee Date 4/7/10

Dean of college Date

For committee use only

For University Curriculum Committee Date 4-22-10

Action taken: ✔ approved as submitted

approved as modified
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<tr>
<td>1st term</td>
<td>FOR 101</td>
<td>Introduction to Forestry</td>
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<td>CIS 120</td>
<td>Intro. Comp Info. Systems (SAS))</td>
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<tr>
<td></td>
<td>MAT 125</td>
<td>Precalculus</td>
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<td></td>
<td>ENG 105</td>
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<td>NAU 100</td>
<td>Transition to College</td>
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<td>2nd term</td>
<td>FOR 212</td>
<td>Trees &amp; Forests of North America</td>
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<td>FOR 215</td>
<td>Writing in Forestry</td>
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<td>BIO 181</td>
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<td>STA 270</td>
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<td></td>
<td>GE</td>
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<td>Total units</td>
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<td>Total units</td>
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| Sophomore Year | | | |
| 3rd term | FOR 211 | Forest Measurements | 3 |
| | FOR 220 | Intro. to Forest and Range Plants | 2 |
| | CHM 130 | Fundamental Chemistry (SAS) *** | 4 |
| | CHM 130L | General Chemistry-Lab *** | 1 |
| | MS/ DIV/CT | Liberal Studies/Diversity/Certificate | 3 |
| | GE | General Elective ** | 1 |
| 4th term | FOR 213 | Ecology and Mgt. of Forest Soils | 3 |
| | BIO 182 | Unity of Life II | 4 |
| | ECO 284 | Principles of Economics-Micro (SPW) | 3 |
| | SC 111 | Fund. Of Public Speaking (SPW) | 3 |
| | MS/ DIV/CT | Liberal Studies/Diversity/Certificate | 3 |
| | GE | General Elective ** | 1 |
| Total units | 14 | Total units | 17 |

| Junior Year | | | |
| 5th term: Semester A-Professional Program | | | |
| FOR 313 | Forest Ecology I | 4 |
| FOR 314 | Forest Ecology II | 3 |
| FOR 315 | Silviculture Principles | 3 |
| FOR 316 | Silviculture Applications | 3 |
| 6th term: Semester B-Professional Program | | | |
| FOR 323W | Forest Management I | 3 |
| FOR 324W | Forest Management II | 3 |
| FOR 325W | Forest Management III | 3 |
| FOR 326W | Forest Management IV | 4 |
| MS/ DIV/CT | Liberal Studies/Diversity/Certificate | 3 |
| Total units | 13 | Total units | 16 |

| Senior Year | | | |
| 7th term: Semester C-Professional Program | | | |
| FOR 413C | Forest Ecosystem Assessment I | 3 |
| FOR 414C | Forest Ecosystem Assessment II | 3 |
| MS/ DIV/CT | Liberal Studies/Diversity/Certificate | 3 |
| MS/ DIV/CT | Liberal Studies/Diversity/Certificate | 3 |
| MS/ DIV/CT | Liberal Studies/Diversity/Certificate | 3 |
| 8th term: Semester D-Professional Program | | | |
| FOR 423C | Forest Ecosystem Planning I | 3 |
| FOR 424C | Forest Ecosystem Planning II | 3 |
| FOR 360 | Natural Resources Policy | 3 |
| MS/ DIV/CT | Liberal Studies/Diversity/Certificate | 3 |
| GE | General Elective | 3 |
| Total units | 15 | Total units | 15 |

Liberal Studies Distribution blocks

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<td>AHI (6 units)</td>
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<td>SPW (6 units)</td>
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<td>SC 111 (3)</td>
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<td>ECO 284 (3)</td>
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<td>STA 270 (3)</td>
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</tbody>
</table>

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Revised 3/31/2010
PROGRAM INFORMATION

A minimum of 120 units are required for this degree. A grade of C or better is required for all FOR courses.

Be aware that some courses (especially 300 & 400 level courses) are only offered once a year (fall only or spring only). These courses may be pre-requisites for future courses. Check with your department for a current course rotation.

* Some courses must be multiple used in Liberal Studies, Diversity and/or Certificate requirements. For example: Take a liberal studies course that also satisfies a diversity requirement.

* Complete an approved certificate or the Individualized Focus for 12-15 units. Certificates require a minimum of 9 units of 300-400 level courses. You must also earn a grade of "C" or better in each certificate or focus course (except FOR 408 or 485). Below is a list of approved certificates. See catalog for requirements.
  - Fire Ecology and Management
  - Forest Health and Ecological Restoration
  - International Forestry and Conservation
  - People and Forests
  - Wildlife Ecology and Management

**Recitations are available and strongly encouraged for BIO 181, BIO 182, & CHM 130; however they are not required.

*** You must complete CHM 130/130L or CHM 151/151L – CHM 130/130L is recommended.

GENERAL INFORMATION

- This degree progression plan is to be used in conjunction with the academic catalog and degree progress report.
- Students should see an academic advisor regularly to confirm their academic progress.
- Students must see an academic advisor before enrollment for the 7th term in preparation for graduation.
- Many courses have pre-requisites. Please check the academic catalog for pre-requisite and placement information.
- Submit graduation application during 7th term.
- Honors students complete different requirements to meet NAU’s liberal studies program. Students should consult an Honors Program advisor for complete information on fulfilling Honors Liberal Studies requirements
- All students are required to complete at least 120 total units which includes:
  - 35 units of liberal studies courses: [http://www4.nau.edu/aio/Articulation/LCourseList.htm](http://www4.nau.edu/aio/Articulation/LCourseList.htm)
  - 6 units of diversity courses (3 units in Global & 3 units in Ethnic). The diversity requirement may be fulfilled in any part of the program of study:
    [http://www4.nau.edu/aio/Articulation/DiversityCourseList.htm](http://www4.nau.edu/aio/Articulation/DiversityCourseList.htm)
  - 30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU
- The diversity requirement may be fulfilled in any part of program of study.
- Math placement: [http://www.cefnr.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml](http://www.cefnr.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml)

CONTACT INFORMATION

Jennifer Tsonis
Student Services Coordinator
School of Forestry
Building 82, Room 103A
Phone: (928) 523-8956
Email: Jennifer.Tsonis@nau.edu

Debbie Wildermuth
Academic Services Coordinator
College of Engineering, Forestry & Natural Sciences
Building 21, Room 102
Phone: 928-523-3842
EMAIL: Debbie.Wildermuth@nau.edu
University Curriculum Committee
Proposal for Course Change

1. Is this course a Diversity or Liberal Studies Course?
   Liberal Studies ☐ Diversity ☐ Both ☐


3. College SBS

4. Academic Unit/Department Communication

5. Current course subject/catalog number EMF 225


   EMF 225 Production Techniques (3)
   Introduction to the theory and techniques of audio production and editing, shooting and lighting for video and film and nonlinear video editing. Letter grade only. Course fee required. Prerequisite: EMF 121 or EMF 123 and EMF 129 or EMF 223.

   Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing.

   EMF 225 Production Techniques (3)
   Introduction to the theory and techniques of audio production and editing, shooting and lighting for video and film and nonlinear video editing. Letter grade only. Course fee required. Prerequisite: EMF 121 or EMF 123 and EMF 129 or EMF 223. Pre-requisite or corequisite: EMF 129 or EMF 223 or JLS 231.

7. Is this course required or an elective in any other plan (major, minor, certificate)? Yes ☐ No ☒ If yes, explain and provide supporting documentation from the affected departments.

8. Does this change affect community college articulation? Yes ☐ No ☒ If yes, explain how in the justification and provide supporting documentation from the affected institutions.

   Is the course a Common Course as defined by your Articulation Task Force? Yes ☐ No ☒ If yes, has the change been approved by the Articulation Task Force? Yes ☐ No ☐

   If this course has been listed in the Course Equivalency Guide, should that listing be left as is ☐ or be revised ☐

   If revised, how should it be revised? __________

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</tbody>
</table>

Revised 8/08
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<thead>
<tr>
<th>Current Course Fee</th>
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<th>If subject or catalog number change</th>
<th>Move [ ] or Delete [ ]</th>
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<td>Current Grading Option*</td>
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<td>Proposed Grading Option*</td>
<td></td>
</tr>
<tr>
<td>Letter Grade [ ] Pass/Fail [ ] or Both [ ]</td>
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<td>Letter Grade [ ] Pass/Fail [ ] or Both [ ]</td>
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<tr>
<td>Current Repeat for additional Units</td>
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<td>Proposed Repeat for additional Units</td>
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</tr>
<tr>
<td>Current Max number of units</td>
<td></td>
<td>Proposed Max number of units</td>
<td></td>
</tr>
<tr>
<td>Current Prerequisite</td>
<td>EMF 121 or EMF 123 and EMF 129 or EMF 223.</td>
<td>Proposed Prerequisite</td>
<td>Pre-requisite or co-requisite: EMF 129 or EMF 223 or JLS 231.</td>
</tr>
<tr>
<td>Current Co-requisite</td>
<td></td>
<td>Proposed Co-requisite</td>
<td>Pre-requisite or co-requisite: EMF 129 or EMF 223 or JLS 231.</td>
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<tr>
<td>Current Co-Convene with</td>
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<td>Proposed Co-Convene with</td>
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</tr>
<tr>
<td>Current Cross List with</td>
<td></td>
<td>Proposed Cross List with</td>
<td></td>
</tr>
</tbody>
</table>

Do you want to remove this course from either the Liberal Studies Course list and or the Diversity Course list? Liberal Studies [ ] Diversity [ ]

9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

As the School of Communication's basic audio and video production class, students outside of the EMF program often take the course, but only EMF majors are required to take EMF 121 and EMF 123. Therefore we are eliminating the pre-req of EMF 121 or EMF 123.

The proposed pre-reqs or co-reqs – EMF 129, EMF 223, or JLS 231 – are all introductory writing classes, each with a focus on a different type of story telling. Assessment of EMF courses has confirmed that students are more successful in the production class if they have learned how to or are currently writing stories.

10. Approvals

Mark [ ]

Department Chair/ Unit Head (if appropriate)/ Date

Chair of college curriculum committee/Date 3-10-10

Dean of college/Date

For Committee use only

For University Curriculum Committee/Date

Action taken: [ ] approved as submitted [ ] approved as modified

Revised 8/08
### University Curriculum Committee
#### Proposal for Course Change

**1. Is this course a Diversity or Liberal Studies Course?**
- Liberal [X]
- Diversity [ ]
- Both [ ]

**2. Course change effective beginning of what term and year?**
- Fall 2010

**3. College**
- Social and Behavioral Sciences

**4. Academic Unit/Department**
- Geography, Planning & Recreation

**5. Current course subject/catalog number**
- GGR 250

**6. Current catalog title, course description and units.** (Cut and paste from current on-line academic catalog [www4.nau.edu/sio/AcademicCatalog/academiccatalogs.htm]).

<table>
<thead>
<tr>
<th>Current Catalog Information</th>
<th>Proposed Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GGR 250 PHYSICAL GEOGRAPHY</strong> (4) Studies the physical elements of the environment. 3 hrs. lecture, 3 hrs. lab. Letter grade only. Course fee required. LAB</td>
<td><strong>GGR 150 PHYSICAL GEOGRAPHY</strong> (4) Studies the physical elements of the environment. 3 hrs. lecture, 3 hrs. lab. Letter grade only. Course fee required. LAB</td>
</tr>
</tbody>
</table>

**7. Is this course required or an elective in any other plan (major, minor, certificate)?**
- Yes [X] No [ ]

*If yes, explain and provide supporting documentation from the affected departments.*

Required for Geography, Geography (extended), and Geographic Information Systems (extended) B.S. degrees and the Geography, Physical Geography, and Content Emphasis Geography minors. The major degrees are currently being redesigned through the SWIFT process (Student Learning & Curriculum Design) and this change fits a component of this redesign plan.

**8. Does this change affect community college articulation?**
- Yes [ ] No [X]

*If yes, explain how in the justification and provide supporting documentation from the affected institutions.*

Is the course a Common Course as defined by your Articulation Task Force? Yes [X] No [ ]

*If yes, has the change been approved by the Articulation Task Force? Yes [ ] No [X]*

If this course has been listed in the *Course Equivalency Guide*, should that listing be left as is [ ] or be revised [X]

If revised, how should it be revised? *Change course number from GGR 250 to GGR 150*

---

Revised 8/08
IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING

<table>
<thead>
<tr>
<th>CURRENT</th>
<th>PROPOSED</th>
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<tbody>
<tr>
<td>Current course subject/catalog number</td>
<td>Proposed course subject/catalog number</td>
</tr>
<tr>
<td>GGR250</td>
<td>GGR150</td>
</tr>
<tr>
<td>Current number of units/credits</td>
<td>Proposed number of units/credits</td>
</tr>
<tr>
<td>Current Course Fee yes ☐ no ☐</td>
<td>If subject or catalog number change</td>
</tr>
<tr>
<td>Yes ☐</td>
<td>Move ☐ or Delete ☐</td>
</tr>
<tr>
<td>Current Grading Option*  Letter Grade ☐ Pass/Fail ☐ or Both ☐</td>
<td>Proposed Grading Option*  Letter Grade ☐ Pass/Fail ☐ or Both ☐</td>
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<tr>
<td>Current Repeat for additional Units</td>
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<td>Current Co-Convene with</td>
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</tr>
<tr>
<td>Current Cross List with</td>
<td>Proposed Cross List with</td>
</tr>
</tbody>
</table>

Do you want to remove this course from either the Liberal Studies Course list and or the Diversity Course list? Liberal Studies ☐ Diversity ☐

9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

The change will better reflect the introductory level of the class material and make the course numbering consistent with other introductory lab-science classes offered at NAU. The change has been discussed and agreed upon by the GPR faculty involved in the curriculum redesign process.

10. Approvals

Department Chair/Unit Head (if appropriate)/Date

Chair of college curriculum committee/Date

Dean of college/Date

For Committee use only

For University Curriculum Committee/Date

Action taken: ☑ approved as submitted ☐ approved as modified

Revised 8/08
Liberal Studies approved for CU for Fall 2010:

ITA 201, 202
LAT 201, 202

-----Original Message-----
From: Linda Marie Robyn
Sent: Wednesday, March 17, 2010 12:36 PM
To: Nicole A Morrow
Cc: Shelly Ann Pleasants
Subject: CHM 130L

Hello Nicole and Shelly -- **CHM 130L** has been approved by Liberal Studies Committee with distribution block as Lab and essential skill as scientific inquiry.

Thanks,
Linda

Dr. Linda Robyn, Ph.D.
Associate Professor
Department of Criminology and Criminal Justice

-----Original Message-----
From: Linda Marie Robyn
Sent: Tuesday, March 09, 2010 5:37 PM
To: Nicole A Morrow
Cc: Shelly Ann Pleasants
Subject: MUS 396

Hello Nicole -- **MUS 396** "The Broadway Musical" has been approved by the Liberal Studies Committee in the AH distribution block; essential skill is effective writing.

Thanks
Linda

Dr. Linda Robyn, Ph.D.
Associate Professor
Department of Criminology and Criminal Justice

-----Original Message-----
From: Linda Marie Robyn
Sent: Tuesday, March 30, 2010 12:03 PM
To: Nicole A Morrow; Shelly Ann Pleasants
Subject: DIS 304

Hello Nicole -- **DIS 304** has been approved by Liberal Studies for SPW and effective writing skill.
Thanks,
Linda

4-8-10

Linda, Thanks for the syllabus and clarification.

Nicole, Please disregard the previous approval of DIS 201 for the block of CU. It has now been approved for SPW instead. FYI, the skill remains Effective Writing.

Annette, I'll need a signed hard copy of the new SPW/EW proposal.

Thanks,

Shelly Pleasants
Program Coordinator
Northern Arizona University
Office of the vice provost for academic affairs Building 51, Room 201 Ph 928-523-1580 Fx 928-523-2344 Em shelly.pleasants@nau.edu

-----Original Message-----
From: Linda Marie Robyn
Sent: Wednesday, April 07, 2010 9:49 PM
To: Shelly Ann Pleasants
Subject: FW: Liberal Studies DIS 201, DIS 304

Hi Shelly -- Attached are syllabi from DIS 304 and 201. DIS 304 is not in question, but if you open and look at the DIS 201 proposal, you will see that it has indeed been changed from CU to SPW. I hope this answers your question.

Linda

From: Shelly Ann Pleasants
Sent: Monday, April 12, 2010 5:18 PM
To: Nicole A Morrow
Cc: Pamela Elizabeth Foti; Debbie A Wildermuth; Linda Marie Robyn
Subject: Delete CM 120 and PL 120 from LS

4-12-10

Hi Nicole,

Please delete CM 120 and PL 120 from Liberal Studies effective fall 2011.

Thanks,

Shelly Pleasants
Program Coordinator
From: Linda Marie Robyn
Sent: Friday, April 23, 2010 11:58 AM
To: Nicole A Morrow
Cc: Shelly Ann Pleasants
Subject: PHI 345W

Hello Nicole and Shelly: PHI 345W "Moral Foundations of Property and Markets" has been approved with a slight revision. Dist Block: AHI; Essential Skill: EW

Thanks,
Linda

Dr. Linda Robyn, Ph.D.
Associate Professor
Department of Criminology and Criminal Justice

[Signature]
4.27.10
Additions to Competency Exams for Credit
Effective – Fall 2010

Advanced Placement -- AP

Studio Art - Drawing
Studio Art – 2D
Studio Art – 3D
Chinese – Language and Culture
Italian – Language and Culture
Japanese – Language and Culture

ART 135, Score 3, 4 or 5
ART 150, Score 3, 4, or 5
ART 151, Score 3, 4 or 5
CHI 101-102 – Score 3
CHI 101-102-201-202 – Score 4 or 5
ITA 101-102 – Score 3
ITA 101-102-201-202 – Score 4 or 5
JPN 101-102 – Score 3
JPN 101-102-201-202 – Score 4 or 5

CLEP

Human Growth and Development
Financial Accounting
Introductory Business Law
American Literature
  AHI in liberal studies
Analyzing & Interpreting Literature
  AHI in liberal studies
English Literature
  AHI in liberal studies
Chemistry

PSY 250 – Score of 50
ACCCLEP 100TS – Score of 50
ACC 205 – Score of 50
ENGCLEP 100TS, Score – 55
ENGCLEP 100TS, Score – 50
ENGCLEP 100TS, Score – 55
CHM 130 and CHM 130L, Score 50, 5 credits

Information Systems and
  Computer Applications
Principles of Management
Principles of Marketing
College Mathematics
Introduction to Educational Psychology
Freshman College Composition

Not Accept
Not Accept
Not Accept
Not Accept
Not Accept
### International Baccalaureate - IB

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course Code</th>
<th>Score</th>
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<tbody>
<tr>
<td>Economics</td>
<td>ECO 285 - Standard</td>
<td>5-7</td>
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<tr>
<td></td>
<td>ECO 284 &amp; 285 - High Level</td>
<td>5-7</td>
</tr>
<tr>
<td>Business and Management</td>
<td>MGT 101</td>
<td>5-7</td>
</tr>
<tr>
<td>Information technology in a Global Society</td>
<td>TRANIB 100TS</td>
<td>5-7</td>
</tr>
<tr>
<td>English</td>
<td>ENGIB 100TS, 3 units</td>
<td>5-7</td>
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<tr>
<td>History - East, Southeast and Oceana</td>
<td>HISIB 100TS, 3 units, Score</td>
<td>5-7</td>
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<tr>
<td>CU in liberal studies</td>
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<tr>
<td>Islamic History</td>
<td>HIS 230/231, 6 units</td>
<td>5-7</td>
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<tr>
<td>Philosophy</td>
<td>PHIIB 100TS, 3 units</td>
<td>5-7</td>
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<tr>
<td>World Religions</td>
<td>Pending – Not available until 2011</td>
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<tr>
<td>Theatre - Introduction</td>
<td>TH 101</td>
<td>5-7</td>
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<tr>
<td>Music</td>
<td>MUS 100 and MUS 293, 6 units</td>
<td>5-7</td>
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<td>MUS 100 - 3 units</td>
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<td>LAT 101 &amp; 102, Score</td>
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<tr>
<td></td>
<td>GER 101,102,201,202,303,304W, Score</td>
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</tbody>
</table>

**Foreign Language A & B**

Will accept for credit. Score 5-7 will earn 8 units, score of 4 will earn 4 units. If we do not have language in which units are earned, credit will be posted to “LANIB 100TS”.

Computer Science and
Computer Science (SL) CS 126, Score 5-7
Design Technology | EGR 186, Score 5-7
Environmental Systems | ENV 101, Score of 5-7
Social and Cultural Anthropology | ANTIB 100TS, 3 units Score 4-7
    CU in liberal studies
Geography | GGRIB 100TS, 3 units, Score of 4-7
    SPW in liberal studies
Psychology | PSY 101, Score of 5-7
Visual Arts | ARTIB 100TS, 3 units, Score of 4-7

**DSST**

**Business**
- Introduction to Business | MGT 101
- Business Law II | Not Accept
- Human Resource Management | Not Accept
- Introduction to Computing | Not Accept
- Management Information Systems | Not Accept
- Money and Banking | Not Accept
- Organizational Behavior | Not Accept
- Personal Finance | Not Accept
- Principles of Finance | Not Accept
- Principles of Financial Accounting | Not Accept
- Principles of Supervision | Not Accept

**SBS**
- Criminal Justice | Not Accept
- General Anthropology | Not Accept – Need more Information
- Human/Cultural Geography | Not Accept – Need more Information
- Introduction to Law Enforcement | Not Accept
- Lifespan Development Psychology | Not Accept – Need more Information
- Principles of Public Speaking | Not Accept

**CAL**
- Art of the Western World | Not Accept – Need More Information
- Introduction to World Religions | Not Accept – Need More Information

**HHS**
- Here’s to Your Health | Not Accept
CEFNS
Principles of Statistics STADSST 100TS, 3 units
  Meets math foundation in liberal studies
Physical Geology GLGDSST 100TS, 3 units
  SAS in liberal studies
Astronomy Not Accept
Environment and Humanity Not Accept
Fundamentals of College Algebra Not Accept
Principles of Physical Science I Not Accept
The Race to Save the Planet Not Accept
Business Mathematics Not Accept
Technical Writing Not Accept

COE
Drug and Alcohol Counseling Not Accept
Fundamentals of Counseling Not Accept
1. Is this course being proposed for Liberal Studies designation? Yes ☒ No ☐
   If yes, route completed form to Liberal Studies.


3. College CAL 4. Academic Unit /Department School of Music

5. Course subject/catalog number MUS 396 6. Units/Credit Hours 3

7. Long course title The Broadway Musical: a study of musical theater from an artistic, historical, and cultural perspective.
   (max 100 characters including spaces)

8. Short course title (max. 30 characters including spaces) The Broadway Musical

9. Catalog course description (max. 30 words, excluding requisites).
   A study of the musical theater genre from an artistic, historical, and culture perspective. Musicals from the standard canon are used as case studies for the various topics.

10. Grading option:
    Letter grade ☒ Pass/Fail ☐ or Both ☐
    (If both, the course may only be offered one way for each respective section.)

11. Co-convened with 11a. Date approved by UGC
    (Must be approved by UGC prior to bringing to UCC. Both course syllabi must be presented)

12. Cross-listed with
    (Please submit a single cross-listed syllabus that will be used for all cross-listed courses.)

13. May course be repeated for additional units? yes ☐ no ☒
    a. If yes, maximum units allowed?
    b. If yes, may course be repeated for additional units in the same term? yes ☐ no ☒
    (ex. PES 100)

14. Prerequisites (must be completed before proposed course)

15. Corequisites (must be completed with proposed course)

Prerequisite: (ENG 105 or HON 190 or HON 191 with grade greater than or equal to C) or International Exchange Student Group

revised 8/08
16. Is the course needed for a new or existing plan of study (major, minor, certificate)?
   Name of plan?  yes □  no  □
   Note: If required, a new plan or plan change form must be submitted with this request.

17. Is a potential equivalent course offered at a community college (lower division only)
    If yes, does it require listing in the Course Equivalency Guide?  yes □  no □
    Please list, if known, the institution and subject/catalog number of the course  yes □  no □

18. Names of current faculty qualified to teach this course: ________________________________

19. Justification for new course, including unique features if applicable. (Attach proposed
    syllabus in the approved university format).

    The school of music offers no upper-division liberal studies courses. This course
    involves critical analysis of various aspects of musical theater. It will require a good
    deal of primary- and secondary source reading, and involve a considerable amount of
    writing. An on-line version of this course will be proposed.

For Official AIO Use Only:
Component Type
Consent
Topics Course

35. Approvals

[Signatures and dates]

Department Chair (if appropriate)  2/22/16
Chair of college curriculum committee  2/25/16
Dean of college  3/2/16

For Committees use only

[Signature and date]

For University Curriculum Committee  4-27-10

Action taken:

revised 8/08
Please attach Syllabus here.
NORTHERN ARIZONA UNIVERSITY
School of Music

MUS 396
The Broadway Musical
2011 Fall

TTh 8:00-9:10  3 Credits

Syllabus

I. Contact Information

Dr. James Leve, Associate Professor, Musicology
Office: Building 37, Room 272
Office Hours: --
Telephone (928) 523-0045
Email James.Leve@nau.edu

Please contact me if you have questions concerning the course syllabus, procedures, or any other problem regarding the class.

II. Course Information

PREREQUISITES
ENG 105 or HON 190 or HON 191 with grades greater than or equal to C.

COURSE DESCRIPTION
A study of the American musical, with an emphasis on the various artistic components, history, and trends. Twenty-four case-study musicals are used to illustrate a range of topics. Assignments are designed to improve student writing and to develop research strategies.

Liberal Studies Program
The mission of the Liberal Studies Program at Northern Arizona University is to prepare students to live responsible, productive, and creative lives as citizens of a dramatically changing world. To accomplish the mission of Liberal Studies, Northern Arizona University provides a program that challenges students to gain a deeper understanding of the natural environment and the world’s peoples, to explore the traditions and legacies that have created the dynamics and tensions that shape the world, to examine their potential contributions to society, and thus to better determine their own places in that world. Through the program students acquire a broad range of knowledge and develop essential skills for professional success and life beyond graduation.

The Broadway Musical is a Liberal Studies course in the Aesthetic and Humanistic Inquiry distribution block. Courses in this block involve students in the study of the human condition through philosophical inquiry and analysis of the various forms of creative expression. This study of the American musical will help students to understand the relationship between context
and human creative expression, conceptual frameworks utilized to make sense of the creative arts, and how human experience and values are expressed through creative endeavors. This course focuses on the development of effective writing skills, which will be accomplished through a series of analytical essay assignments related to the content and themes of course.

**Student Learning Expectations/Outcomes**

1) Students demonstrate an historical, artistic, and cultural understanding of the American musical theater in a series of short essays.
2) Students analyze the dramatic and musical components of musicals.
3) Students write critically and analytically about musical theater.

**COURSE STRUCTURE AND APPROACH**

Classes focus on a single topic and a case-study musical. Students study the script, music, and secondary literature for the musicals prior to the class meetings designated for each work. Class meetings include discussion of assigned secondary literature, analysis, and guided listening.

### III. Course Outline (unless noted materials are accessible from Vista)

#### Unit I: Constituent Components of a Musical

8/25  Introduction  
*Oklahoma* and the Integrated Book Musical

8/27  Reading:  
- Script (Library Reserves, ML 49 .R67 1959)  
- James Leve, "The Integrated Book Musical: *Oklahoma!*"  
- Scott McMillin, "Integration and Difference," in *The Musical as Drama.*  

Media:  
- Original Broadway Recording (Library Reserve, D1812)  
- Film (DVD 370)  
- Score (M1503.R68405 1943) (optional)

9/1  Introduction to Research (meet in library, Room 298)

9/3  The Book: *Guys and Dolls*  

Reading:  
- Script  
- James Leve, "The Book: *Guys and Dolls*"  
- Damon Runyon, *Stories of Broadway,* Introduction and "The Idyll of Miss Sarah Brown" (optional)  

Media:  
- 1992 Broadway cast recording (Library Reserve, D3467)  
- Score:  

9/8  The Orchestration: *Sweeney Todd*  

Reading:  
- Levec, "Orchestration: *Sweeney Todd*"
Media: Original Broadway cast recording (D1809)
       2001 video recording (DVD 550)
Score: Library Reserve, M1503.S6974 S8 1981 (optional)

9/10  The Producer: *Hello, Dolly!

Reading: Script (Library Reserves)
         Leve, "The Producer: *Hello, Dolly!"
Media:  1994 Broadway cast recording (Library Reserve, D5168)
       1969 film (Library Reserve, DVD2206) (optional)
Score: Library Reserve, M1503.H546 H42 1980 (optional)

9/15  The Actor: *Gypsy

Reading: Script (Library Reserves)
         Raymond Knapp, "Gender and Sexuality," in The American Musical and the
         Performance of Personal Identity, 215-228.
Media:  Original Broadway cast recording
Score: Library Reserve, M1503.S937G9 1960

9/17  Test 1

Unit 2: History

9/22  Turn of the Century: *Little Johnny Jones

Reading: Script (Library Reserves)

9/24  The Teens: Competing Forms: *Very Good, Eddie and *Naughty Marietta

Reading: *Very Good, Eddie, script (Library Reserves)
         Philip John Martin, Princess Theatre Musicals, 141-171.
Media: Recording

9/29 Reading: *Naughty Marietta, script (Library Reserves)
         William A. Everett, "Romance, Nostalgia and Nevermore: American and
         British Operetta in the 1920s," in The Cambridge Companion to the Musical,
         47-62.
Media: Recording (DRAM)

10/1  Twenties: *Show Boat

Media:  1936 film (Library Reserve, VT 9613 or DVD 23)
       1951 film (Library Reserve, DVD1814)
       1992 Broadway cast recording

10/6  Thirties: *Anything Goes and Of Thee I Sing

Reading: *Anything Goes, script (Library Reserves)
Of Thee I Sing, script (Library Reserves)  
Media: Studio cast recording of Anything Goes  
Studio cast recording of Of Thee I Sing  

10/8  Forties: Brigadoon  
Reading: Script (Library Reserves)  
Media: Original Broadway cast recording (Library Reserve, D3158)  

10/13  Fifties: The Music Man and West Side Story  
Reading: The Music Man, script (Library Reserves)  
West Side Story, script (Library Reserves)  
Media: Film of Music Man (Library Reserve, DVD 90)  
Film of West Side Story (Library Reserve, DVD 27)  

10/15  Sixties: Cabaret  
Reading: Script (Library Reserves)  
Leve: "The Sixties: Cabaret"  
Media: Original Broadway cast recording (Library Reserve, D3464)  
1971 Film (Library Reserve, DVD 1059)  

10/20  Peer editing  

10/22  Peer editing  

10/27  Seventies: Company  
Reading: Script (Library Reserves)  
Media: Original Broadway cast recording (Library Reserve, D3464)  
Film of 2007 Broadway production (Library Reserve, DVD 3289)  

10/29  Eighties: Phantom of the Opera  
Reading: John Snelson, Andrew Lloyd Webber, "'Who Are You, Strange Angel?': Multiple Personalities in The Phantom of the Opera," 77-122  
Media: Original cast recording (Library Reserve, D2090)  
2004 film (tba)  

11/3  Nineties: Rent  
Reading: Judith Sebesta, "Of Fire, Death, and Desire"  
Media: Film (Library Reserve, DVD 1953)  

11/5  The New Century: Wicked  
Reading: tba
Media: Original Broadway cast recording (Library Reserve, D4809)

11/10 Test 2

11/12 Peer Editing

11/17 Peer Editing

11/19 Off Broadway
Reading: Script (Library Reserves)
Leve, "The Musical Off Broadway: The Fantasticks"
Media: Original cast recording (Library Reserve, D5154)
2001 Film (Library Reserve, DVD 289) (optional)

11/24 The Black Musical
Reading: Script (ML50.S618 W6 1979) (Library Reserves)
Leve, "The Black Musical: The Wiz"
Media: Original Broadway cast recording (Library Reserve, C5837)
1978 Film (Library Reserve, DVD1792) (optional)

11/25 Last day to submit final paper (Assignment 7)

11/26 Thanksgiving Holiday

12/1 Rock on Broadway: Hair
Reading: Script (Library Reserves)
Elizabeth L. Wollman, The Theater Will Rock, 42-64.
Raymond Knapp, "Counter-mythologies," in The American Musical and the
Formation of National Identity, 153-162.
Media: Original Broadway cast recording
1979 Film (Library Reserve, DVD 2884) (optional)

12/3 Gender and Identity: Sweet Charity
Reading: Script (Library Reserve, ML50.C688S92 1966)
Media: Original Broadway cast recording

12/9 3:00 Final Exam
IV. Evaluation Methods and Deadlines

Students complete a series of short writing assignments, write a research paper, and take four texts.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Short written assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Final Paper</td>
<td>30%</td>
</tr>
<tr>
<td>Four tests</td>
<td>10% each (essay format and listening)</td>
</tr>
</tbody>
</table>

All final grades are based on strict percentages.

- A 90-100%
- B 80-89%
- C 70-79%
- D 60-69%
- F below 59%
Research & Writing Assignments

Review the topics and titles below. Decide on a topic for your research paper and one of the musicals listed beneath that topic. Your selections will be the basis for your writing assignments and research paper. Do NOT chose a work with which you are already familiar. In the next few days, access the script, score, and recording for the work you selected. Over the next two weeks, you should make yourself intimately familiar with these materials.

Operetta
Chocolate Soldier

Twenties
Irene
Lady Be Good

Thirties
Strike up the Band
Let 'em Eat Cake

Forties
On the Town
Bloomer Girl
Carousel
South Pacific
Annie Get Your Gun

Fifties
The King and I
Candide
The Pajama Game
The Sound of Music

Sixties
Mame
110 in the Shade
Carnival
On a Clear Day, You Can See Forever
1776

Eighties
Falsettos
Les Miserable
Sunday in the Park with George
Into the Woods
La Cage aux Folles
Barnum
The Mystery of Edwin Drood

Nineties
Kiss of the Spider Woman
Ragtime
The Secret Garden

The New Century
Light in the Piazza
Grey Gardens
Spring Awakening
UrinTown
Lion King
Wild Party

Black Musical
Porgy and Bess
Purlie
Hallelujah, Baby!
Raisin
Jelly's Last Jam
Caroline, or Change

Concept Musical
Follies
Chorus Line
Company
Assassins
Chicago
Into the Woods
The Book
Camelot
She Loves Me
My Fair Lady
Fiddler on the Roof

Megamusical
Cats
Evita
Miss Saigon
Dream Girls

Rock Musical
Little Shop of Horrors
Godspell
Jesus Christ Superstar

The Music
Candide
A Little Night Music
Kiss Me, Kate
Light in the Piazza
Fiddler on the Roof
My Fair Lady

Seventies
A Little Night Music
Pacific Overtures
70, Girls, 70
Pippin
Evita
V. Course Policies

ATTENDANCE
Daily attendance is **mandatory**. Each unexcused absence (other than the first) will lower a student’s final grade by 5%. Four unexcused absences result in a final grade of 0. Students who arrive more than 15 minutes late are marked absent, and being late three times lowers a student’s grade 5%. Students who miss six classes for any reason will receive a final grade of 0. Absences directly related to the flu will be excused, and the honor system will be evoked in this regard.

Note: An **excused absence** is defined as a University Institutional Excuse, a *documentable severe illness* or personal emergency. Students with a University Institutional Excuse must contact me before being absent from class and provide a copy of the Institutional Excuse.

CELL PHONE OR ANY OTHER UNAUTHORIZED ELECTRONIC DEVICE
The use of a cell phone or any other unauthorized electronic device during class will result in a 5% deduction from the student’s final grade. The same consequence extends engaging in non-class activities on laptop computers, such as on-line shopping. Students who need to leave a cell phone active in case of an emergency must obtain permission from the instructor prior to the class session.

UNIVERSITY STATEMENT ON PLAGIARISM AND CHEATING
A student deemed guilty of plagiarism or cheating will be given a grade of ZERO (F) for the examination or paper associated with such plagiarism or cheating. The instructor will also recommend to the Dean of Students that the student be barred from further attendance of the class or be given an F for the course.
NAU POLICY STATEMENTS

SAFE ENVIRONMENT POLICY

NAU's Safe Working and Learning Environment Policy seeks to prohibit discrimination and promote the safety of all individuals within the university. The goal of this policy is to prevent the occurrence of discrimination on the basis of sex, race, color, age, national origin, religion, sexual orientation, disability, or veteran status and to prevent sexual harassment, sexual assault or retaliation by anyone at this university.

You may obtain a copy of this policy from the college dean's office. If you have concerns about this policy, it is important that you contact the departmental chair, dean's office, the Office of Student Life (523-5181), the academic ombudsperson (523-9368), or NAU's Office of Affirmative Action (523-3312).

STUDENTS WITH DISABILITIES

If you have a disability, you can arrange for accommodations by contacting the office of Disability Support Services (DSS) at 523-8773 (voice) 523-6906 (TTY). You are encouraged to provide documentation of the disability to DSS at least 8 weeks prior to the beginning of the semester so arrangements can be made to meet your individual needs. You must register with DSS each semester you are enrolled and wish to use accommodations.

Faculty are not authorized to provide accommodations without prior approval from DSS. Students are encouraged to notify their instructors a minimum of one week in advance of the need for accommodation. Failure to do so may result in a delay in provision of the accommodation.

Concerns may be brought to the attention of the office of Disability Support Services or to the ADA coordinator in the Affirmative Action Office.

INSTITUTIONAL REVIEW BOARD

Any study involving observation of or interaction with human subjects that originates at NAU—including a course project, report, or research paper—must be reviewed and approved by the Institutional Review Board (IRB) for the protection of human subjects in research and research-related activities.

The IRB meets once each month. Proposals must be submitted for review at least fifteen working days before the monthly meeting. You should consult with your course instructor early in the course to ascertain if your project needs to be reviewed by the IRB and/or to secure information or appropriate forms and procedures for the IRB review. Your instructor and department chair or college dean must sign the application for approval by the IRB. The IRB categorizes projects into three levels depending on the nature of the project: exempt from further review, expedited review, or full board review. If the IRB certifies that a project is exempt from further review, you need not resubmit the project for continuing IRB review as long as there are no modifications in the exempted procedures.
A copy of the IRB Policy and Procedures Manual is available in each department’s administrative office and each college dean’s office. If you have questions, contact Carey Conover, Office of Grant and Contract Services, at 523-4889.

**ACADEMIC INTEGRITY**
The university takes an extremely serious view of violations of academic integrity. As members of the academic community, NAU’s administration, faculty, staff and students are dedicated to promoting an atmosphere of honesty and are committed to maintaining the academic integrity essential to the education process. Inherent in this commitment is the belief that academic dishonesty in all forms violates the basic principles of integrity and impedes learning. Students are therefore responsible for conducting themselves in an academically honest manner.

Individual students and faculty members are responsible for identifying instances of academic dishonesty. Faculty members then recommend penalties to the department chair or college dean in keeping with the severity of the violation. The complete policy on academic integrity is in Appendix F of NAU’s Student Handbook.
Plagiarism and Academic Dishonesty

1) Submitting a paper that you did not write.
2) Quoting a source without citing it.
3) Paraphrasing a sentence, sentences, a full paragraph without properly citing the source (rewriting another author’s work is plagiarism). This category includes rewording, adding words, and altering phrases or sentences.
4) Over paraphrasing work by one of more authors throughout a paper.
5) Drawing from a source without citing it in a footnote. It is not enough to merely include a source in your bibliography.
6) Including or rewriting downloaded passages from the Internet.
7) Submitting the same paper or a rewritten version of a paper that you wrote for another current or previous class. This act misrepresents your effort and shows an effort to get away without doing the prescribed work.
8) Receiving so much help from a fried or colleague that the paper is effectively co-written. Do not cross the line between effective editing and "ghost writing."
9) Having a professor or colleague write the paper with you or provide so much assistance that the work is not longer fully your own. (It is, however, acceptable to seek outside help, but you must remain the author of your paper).
10) Any other form of dishonesty regarding the source of your work.
University Curriculum Committee
Proposal for New Course

1. Is this course being proposed for Liberal Studies designation?  
   Yes □  No □
   If yes, route completed form to Liberal Studies.

   Fall 2011

3. College  CAL  4. Academic Unit/Department  PHI

5. Course subject/catalog number  345W  6. Units/Credit Hours  3

7. Long course title  Moral Foundations of Property & Markets
   (max 100 characters including spaces)

8. Short course title (max. 30 characters including spaces)  
   Morality, Property & Markets

9. Catalog course description (max. 30 words, excluding requisites).

   Reading and critical analysis of texts dealing with the fundamental elements of market economies, including property, freedom, efficiency, distributive justice, public goods, and moral hazard among others. This course fulfills NAU's junior-level writing requirement. Letter grade. Prerequisite: ENG 105 or HON 190 or 191 or equivalent, and 3 units of philosophy coursework. JWRT

10. Grading option:
    Letter grade  □  Pass/Fail  □  or Both  □
    (If both, the course may only be offered one way for each respective section.)

11. Co-convened with  n/a  11a. Date approved by UGC  n/a
    (Must be approved by UGC prior to bringing to UCC. Both course syllabi must be presented)

12. Cross-listed with  n/a
    (Please submit a single cross-listed syllabus that will be used for all cross-listed courses.)

13. May course be repeated for additional units?  yes  □  no  □
    a. If yes, maximum units allowed?  n/a
    b. If yes, may course be repeated for additional units in the same term?  yes  □  no  □
       (ex. PES 100)

14. Prerequisites (must be completed before proposed course)  
    ENG 105 or HON 190 or 191 or equivalent, and 3 units of philosophy coursework.

15. Corequisites (must be completed with proposed course)  
    n/a

16. Is the course needed for a new or existing plan of study (major, minor, certificate)?  
   yes  □  no  □

revised 8/08
Philosophy, Politics and Law

Note: If required, a new plan or plan change form must be submitted with this request.

17. Is a potential equivalent course offered at a community college (lower division only) yes ☐ no ☒
If yes, does it require listing in the Course Equivalency Guide? yes ☐ no ☐
Please list, if known, the institution and subject/catalog number of the course

18. Names of current faculty qualified to teach this course: C. Griffin, G. Rudebusch, J. Downard,

19. Justification for new course, including unique features if applicable. (Attach proposed syllabus in the approved university format).

This course meets a need assessed on the basis of alumni interviews, graduating senior interviews, department meetings, meetings with collaborating department and college representatives at NAU, discussions with the philosophy department at UA, and examination of peer programs at English-speaking universities around the world.

This course constitutes the junior level writing course for the proposed new program in Philosophy, Politics and Law. Markets have emerged as the heart of economies across the globe. While mathematical models have long offered theoretical explanation and justification of the efficiency of markets, markets presuppose institutions and background conditions that are controversial from the moral point of view. While efficient economies are highly desirable, a course of this nature equips students to evaluate how markets might achieve efficiency, how markets might systematically FAIL to achieve efficiency, as well as how achievement of efficiency might come at the cost of substantial moral harm. While most governments aim to regulate and intervene even where free markets are championed, the moral basis for evaluating, regulating and intervening in markets is essential to the maintenance of a legitimate political order. To the extent markets are increasingly global, systematic moral evaluation of markets, the objective of this course, is essential to the mission of a university with aspirations for leadership in this area.

A course of this nature is central to Philosophy, Politics and Law or Economics programs in universities in the U.S. (e.g., The University of Arizona, SUNY Binghamton) and abroad (Oxford University).
35. Approvals

George Reddell  
Department Chair (if appropriate)  4-13-10

Pam Blethen  
Chair of college curriculum committee  4-13-10

Dean of college  4-13-10

For Committees use only

Ron Britton  4-22-10

For University Curriculum Committee

Action taken:

✓ Approved as submitted

Approved as modified
PHI 345W: Moral Foundations of Property & Markets (Junior Level Writing Course)
College of Arts & Letters, Philosophy Department
Semesters Offered: Either Fall or Spring Semesters, once every 2 semesters
Clock Hours: 3, Credit Hours: 3
Instructor: Christopher Griffin (or Jeff Downard, George Rudebusch)
Instructor Office: Babbitt Academic Annex, Room 302
Office Hours: TTH, 10:30am-Noon, and by appointment

Course Prerequisites: 3 hours of philosophy coursework, or instructor's consent.

Course Description:
Markets have emerged as the dominant system of economic production. But markets presuppose for their operation certain conditions that can be evaluated morally. For example, markets presuppose freedom of buyers and sellers to enter into contractual exchange. There are, however, competing conceptions of individual freedom in moral philosophy and the different conceptions imply competing things about market freedom. Further, markets presuppose that individuals can be owners of various types of objects (e.g., material goods, ideas, technologies), but there are competing justifications for property and the limits to ownership that shape the limits of markets. Markets are thought valuable because they are efficient in a particular economic sense, but efficiency can be evaluated against other significant moral values with which it might conflict. Also, markets rely upon enforcement mechanisms (to protect property entitlements and to ensure contracts are executed), but there are competing theories about the justification for the use of force (by states and other agencies). These topics are the subject matter for our study in this course.

Student Learning Expectations/Outcomes for this Course:

Students successfully completing this course will:

> identify the core elements of moral significance presupposed by market economies (contract, free exchange, property, efficiency, public goods);
> be acquainted with different moral frameworks for evaluating the conceptions of freedom that characterize free exchange in a market and competing justifications for private ownership of the objects of exchange;
> be able to define the economic conception of efficiency characteristic of economic models (through such ideas as supply, demand, marginal costs and marginal utility), and evaluate the moral weight of this notion against other moral values with which it might conflict;
> examine the relationship between market efficiency and political authority (legislative coercion);
> satisfy the University Writing Intensive requirement by writing a minimum of 20 pages of revised prose essays.

Course Structure:
This course will be a mix of lecture and directed student discussion oriented towards interpretation and evaluation of philosophical and moral claims central to markets and their moral evaluation. As a Writing Emphasis course, students will receive detailed commentary on their written essay work and will revise essays in light of this commentary.

Textbook:
A reader will be produced with excerpts from works such as the following:
John Locke, Second Treatise on Civil Government, 1690, Chapter Five;  
Jean Jaques Rousseau, Discourse on the Origins of Inequality Among Men, (1755)  
Robert Nozick, Anarchy State and Utopia, (1971), excerpts;  
Adam Smith, The Morality of Sentiment, (1759), excerpts;  
Adam Smith, Wealth of Nations, (1776), excerpts;  
Karl Marx, Critique of the Gotha Programme, (1875), excerpts.  

**Course Outline:**

Part One (Week 1): Course Introduction; Background on Moral Evaluation; Conceptual Elements of the Market: Free Exchange & Private Ownership of Property


Part Three (Week 4): What's NOT so Great about Markets? INEFFICIENCIES – Liabilities for Markets to Fail to Provide for Public Goods

Part Three (Week 5): Government as a Non-Market Solution to Public Goods Provision Failure (Inefficiency), and the Risk of Inefficiency of Government


Part Five (Weeks 9-11): Markets & Morality—Property


Part Seven (Week 15): Drawing Conclusions—student debate based on the position of their final drafts of final essay.

**Assessment of Student Learning Outcomes:**

Students completing this course satisfy thereby the Junior Level Writing Requirement. Consequently, the bulk of the student’s grade is to be computed by his or her performance on a series of essays to be revised in light of instructor comments. However, students will also construct critical reading questions in response to the assigned readings, and prepare short written response to questions posed by the instructor. Tentatively, the grade will be computed as follows:

**Essay One** (Due at the end of Week 4): 4-5 page essay reconstructing the efficiency based argument in favor of Markets, and their liability to inefficiency in the form of public goods.
Essay Two (Due in Week 6) 6-8 page essay, revised and extended to explore the potential benefits and risks of authorizing Government to intervene in market activity in order to improve efficiency.

Final Essay (Due at the end of Week 14) 8-10 page essay, revising previous essay and extending it to cover the student's reasoned moral judgment regarding markets (both ideal and non-ideal).

Critical Discussion Questions: Students will pose critical questions based on the assigned readings on a regular basis (once per week minimum). Students will be divided into small groups to discuss questions amongst themselves. From each sub-group, a question will be selected by those students for posting on the board, which will then drive class discussion.

Reading Responses: Students will, from time to time, prepare one-page responses to be discussed in class, reacting to a prompt on the reading prepared in advance by the instructor. The frequency of these will be determined by the degree to which students are demonstrating familiarity with the core elements of the assigned readings. The less students demonstrate critical reading competence, the more frequent these responses.

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<td>First Essay</td>
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<td>Reading Responses</td>
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Grade Scale:
90-100% -- A
80- 89% -- B
70- 79% -- C
60- 69% -- D
0- 59% -- F

Attendance & Missed Assignments: I take attendance regularly. I use attendance to make judgment calls at the end of the course for students whose grades are on the border. If you are absent on a day when an assignment is due, it is your responsibility to get the material in to me BY THE END OF CLASSTIME (send it with a friend/classmate, e-mail it BEFORE end of class). No late papers will be accepted unless arranged in advance with me. Unexpected absences require appropriate documentation (Fronske will not write excuse notes, by the way). If you miss class and need to know if an assignment has been issued/announced in class, check the course website or e-mail me well enough in advance for you to gain a reply and complete the appropriate assignment.

Miscellaneous:

Cell Phones:
Turn 'em off. Off. Don’t text in the class. It’s distracting to me (since you might be texting me and I won’t have my phone). Seriously, though, it’s bad form and can be distracting to others.

revised 8/08
University Policies:
All courses offered at NAU are governed by a set of policies which are considered part and parcel of every syllabus. A sheet containing these policies should be reviewed by each student, and may be accessed by following the link on the course website. It may be accessed here.

Academic Dishonesty Statement & Policy
Be sure to read carefully my statement and policy on Plagiarism, also posted on my main course website.
1. Is this course being proposed for Liberal Studies designation? Yes [ ] No [x]

If yes, route completed form to Liberal Studies.


3. College CAL 4. Academic Unit /Department PHI

5. Course subject/catalog number 345WH 6. Units/Credit Hours 3

7. Long course title Moral Foundations of Property & Markets
(max 100 characters including spaces)

8. Short course title (max. 30 characters including spaces) Morality, Property & Markets

9. Catalog course description (max. 30 words, excluding requisites). 26 words, not including boilerplate

Reading and critical analysis of texts dealing with the fundamental elements of market economies, including property, freedom, efficiency, distributive justice, public goods, and moral hazard among others. This course fulfills NAU's junior-level writing requirement. Letter grade. Prerequisite: ENG 105 or HON 190 or 191 or equivalent, and 3 units of philosophy coursework. JWRT

10. Grading option:
Letter grade [x] Pass/Fail [ ] or Both [ ]

(If both, the course may only be offered one way for each respective section.)

11. Co-convened with n/a 11a. Date approved by UGC n/a
(Must be approved by UGC prior to bringing to UCC. Both course syllabi must be presented)

12. Cross-listed with n/a
(Please submit a single cross-listed syllabus that will be used for all cross-listed courses.)

13. May course be repeated for additional units? yes [ ] no [x]

a. If yes, maximum units allowed? n/a

b. If yes, may course be repeated for additional units in the same term? yes [ ] no [ ]
(ex. PES 100)

14. Prerequisites (must be completed before proposed course) ENG 105 or HON 190 or 191 or equivalent, and 3 units of philosophy coursework.

15. Corequisites (must be completed with proposed course) n/a

16. Is the course needed for a new or existing plan of study (major, minor, certificate)? yes [x] no [ ]

revised 8/08
17. Is a potential equivalent course offered at a community college (lower division only) yes □ no ☒
   If yes, does it require listing in the Course Equivalency Guide? yes □ no □
   Please list, if known, the institution and subject/catalog number of the course ________________

18. Names of current faculty qualified to teach this course: C. Griffin, G. Rudebusch, J. Downard,

19. Justification for new course, including unique features if applicable. (Attach proposed syllabus in the approved university format).

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>George Mill</td>
<td>4-13-10</td>
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<tr>
<td>Department Chair (if appropriate)</td>
<td></td>
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<tr>
<td>Chair of college curriculum committee</td>
<td>4-13-10</td>
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<td>Dean of college</td>
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For Committees use only

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<thead>
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<th>Name</th>
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<tbody>
<tr>
<td>Ron E.</td>
<td>4-27-10</td>
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<tr>
<td>For University Curriculum Committee</td>
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</tbody>
</table>

Action taken:

- [ ] Approved as submitted
- [ ] Approved as modified

revised 8/08
Course Prerequisites: 3 hours of philosophy coursework, or instructor's consent.

Course Description:
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Course Outline:

Part One (Week 1): Course Introduction; Background on Moral Evaluation; Conceptual Elements of the Market: Free Exchange & Private Ownership of Property

Part Two (Weeks 2-3): What’s so Great about Markets? EFFICIENCY—Supply, Demand, Marginal Costs, Marginal Utility, Paretian Efficiency.

Part Three (Week 4): What’s NOT so Great about Markets? INEFFICIENCIES—Liabilities for Markets to Fail to Provide for Public Goods

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Second Essay: 30%
Third Essay: 30%
Critical Discussion Questions: 15%
Reading Responses: 10%

Grade Scale:
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revised 8/08
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<td>PHI</td>
</tr>
<tr>
<td>3. Academic Plan Name</td>
<td>B.A. in Philosophy,</td>
</tr>
<tr>
<td></td>
<td>Politics, and Law</td>
</tr>
<tr>
<td>4. Subplan (if applicable)?</td>
<td></td>
</tr>
<tr>
<td>5. Effective Date</td>
<td>FALL 2011</td>
</tr>
<tr>
<td>6. Is this proposal for a</td>
<td>X New Plan</td>
</tr>
<tr>
<td></td>
<td>□ Plan Change*</td>
</tr>
<tr>
<td></td>
<td>□ Subplan Change</td>
</tr>
<tr>
<td></td>
<td>□ Plan Deletion</td>
</tr>
<tr>
<td></td>
<td>□ Subplan Deletion</td>
</tr>
<tr>
<td></td>
<td>□ New Subplan</td>
</tr>
</tbody>
</table>

*Plan changes must be accompanied by an updated 8 semester plan.

7. ALL Education plans, please indicate NCATE Designation:

□ Initial Plan □ Advanced Plan □ Remove Designation

□ Change from Initial to Advanced Plan □ Change from Advanced to Initial Plan
For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the current online academic catalog:
(http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm)
Be sure you include all catalog text that pertains to this plan change.

Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing and strikethrough what is being deleted.
(Describe the changed requirements under headings that match those used in the left column. Please be aware that if the units are not totaled correctly, the catalog editor will adjust them accordingly.)

Admission requirements
Admissions requirements will be the same as for Honors (SAT 1290, ACT 29, or top 5% of graduating high school class). In this way all accepted PPL students would be Honors eligible. PPL students in Honors would be able to take its core reading and writing seminars on topics oriented toward PPL.

Completion requirements
In order to complete this major, a student will take 54 units of course work, including at least 6 units of Economics, at least 6 units of History, at least 18 units of Philosophy (in Ethics, Logic, and Legal and Political Theory), at least 3 units of Political Science, and at least 3 units of Statistics.
Students must achieve proficiency in a language other than English equivalent to four semesters of instruction. Students are advised to do a practicum of some form and required to attend at least two PPL seminars with visiting experts.

Lower Division (24 units)
Economics and Statistics (9 units)

ECO 284-5 Principles of Economics, Micro and Macro (Prerequisite: MAT 114 or Math Placement 55, 6 units)

STA 270 (Applied Statistics, Prerequisite MAT 102X, 3 credits) or 275 (Statistical Analysis, Prerequisite: MAT 131 or MAT 137 with a grade greater than or equal to C, 3 units)

History and Politics (9 units)

HIS 100/H and 102/H World History, or HIS 240/H and 241 Western Civilization, or HIS 291-
2 United States History (6 units)  
POS 201 Introduction to Politics or  
250 Public Policy (3 units)  

**Ethics and Logic (6 units)**  
PHI 105/H Introduction to Ethics (3 units)  
PHI 223/H Argument Analysis (3 units)  

**Upper Division (30 units)**  

**Core (15 units)**

- PHI 347 Philosophy of Law (3 units)  
- PHI 357 Political Philosophy (3 units)  
- PHI 303/H Decision Theory (new course 3 units)  
- PHI 345W Moral Foundations of Property and Markets (new course: junior level writing requirement, 3 units)  
- PHI 414C Senior Capstone (or POS 421C or ECO 498C or HIS capstone as approved by PPL faculty advisory committee, 3 units)  

**Distribution (any 15 units from the following list)**

- ACC 405 Advanced Business Law (Prerequisite: ACC 205, 3 units)  
- ECO 384 Intermediate Micro-economics Theory (3 units)  
- ECO 385 Intermediate Macroeconomics Theory (3 units)  
- ECO 480 Political Economy (3 units)  
- ECO 484 Development of Economic Thought (3 units)  
- ECO 486 International Economics (3 units)  
- HIS 466 Legislative Internship (1-12 units)  
- HIS 494 History of the American Economy (3 units)  
- HIS 495 Topics in U.S. Class and Labor History (3 units)  
- MAT 136 Calculus I (4 units)  
- MAT 137 Calculus II (4 units)  
- MAT 238 Calculus III (4 units)  
- MAT 239 Differential Equations (3 units)  
- MAT 368 Mathematical Modeling (3 units)
units)

MAT 316 Introduction to Linear Algebra (3 units)
MAT 320W Foundations of Mathematics (3 units)
PHI 301 Symbolic Logic (3 units)
PHI 347 Philosophy of Law or PHI 348 Law and Diversity (3 units)
PHI 408 Fieldwork Experience (1-12 units)
PHI 466 Legislative Internship (1-12 units)
PHI 485 Undergraduate Research (1-6 units)
PHI 497 Independent Study (1-6)
POS 335 Political Economy (3 units)
POS 445 Constitutional Law: Separation of Powers and Federalism (3 units)
POS 446 Constitutional Law: Civil Liberties and Rights (3 units)
STA 371 Intermediate Statistics (3 units)
STA 471 Regression Analysis (3 units)

Required PPL seminars
Students are required to attend at least two seminars with distinguished visiting lecturers. Typically, a seminar will consist of no more than 15 students in a roundtable session with a guest lecturer. The student will read and be prepared to raise questions about an excerpt of work in progress by the guest.

Recommended Practicum
Students are advised to do one or more of the following:

- Research project in collaboration with a faculty member
- Internship such as a legislative internship (HIS 466 or PHI 466) or with a law firm or business (PHI 408)
- Service learning such as leading philosophy sessions in local high schools (PHI 408)
- Semester of external study as an
international or national exchange student

Language Requirement
Students must demonstrate proficiency in a language other than English that is equivalent to four terms of university coursework in the same language.

Degree Progression Plan

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; term</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; term</th>
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<tbody>
<tr>
<td>ENG 105</td>
<td>Critical Reading &amp; Writing 4</td>
<td>PPL</td>
</tr>
<tr>
<td>MAT 114</td>
<td>Quantitative Reasoning 3</td>
<td>PPL</td>
</tr>
<tr>
<td>LS</td>
<td>Language (101) (CU) 4</td>
<td>LS</td>
</tr>
<tr>
<td>PPL</td>
<td>HIS 100 or 240 or 291 3</td>
<td>LS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PPL</td>
</tr>
<tr>
<td></td>
<td>Total units 14</td>
<td>Total units 16</td>
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<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; term</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; term</th>
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</thead>
<tbody>
<tr>
<td>PPL</td>
<td>ECO 285 Macro-economics 3</td>
<td>PPL</td>
</tr>
<tr>
<td>PPL</td>
<td>PHI 223 Argument Analysis 3</td>
<td>PPL</td>
</tr>
<tr>
<td>LS</td>
<td>Language (201) (LS Elective) 4</td>
<td>LS</td>
</tr>
<tr>
<td>LS</td>
<td>Liberal Studies 3</td>
<td>LS</td>
</tr>
<tr>
<td>GE</td>
<td>General Elective 3</td>
<td></td>
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<tr>
<td></td>
<td>Total units 16</td>
<td>Total units 14</td>
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<table>
<thead>
<tr>
<th>Junior Year</th>
<th>5&lt;sup&gt;th&lt;/sup&gt; term</th>
<th>6&lt;sup&gt;th&lt;/sup&gt; term</th>
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<tbody>
<tr>
<td>PPL</td>
<td>PHI 303 Decision Theory 3</td>
<td>PPL</td>
</tr>
<tr>
<td>PPL</td>
<td>PHI 347 Phi of Law 3</td>
<td>PPL</td>
</tr>
<tr>
<td>GE</td>
<td>General Elective 3</td>
<td>PPL</td>
</tr>
<tr>
<td>LS</td>
<td>Liberal Studies 3</td>
<td>LS</td>
</tr>
<tr>
<td>GE</td>
<td>General Elective 3</td>
<td>GE</td>
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<tr>
<td></td>
<td>Students must see a college advisor before early enrollment in the 7&lt;sup&gt;th&lt;/sup&gt; term.</td>
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<tr>
<td></td>
<td>Total units 15</td>
<td>Total units 15</td>
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</table>

<p>| Senior Year | 7&lt;sup&gt;th&lt;/sup&gt; term | 8&lt;sup&gt;th&lt;/sup&gt; term |</p>
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<tr>
<th>PPL</th>
<th>PHI 357 Political Phi</th>
<th>3</th>
<th>PPL</th>
<th>Capstone</th>
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<tr>
<td>PPL</td>
<td>UD distribution</td>
<td>3</td>
<td>PPL</td>
<td>UD distribution</td>
<td>3</td>
</tr>
<tr>
<td>PPL</td>
<td>UD distribution</td>
<td>3</td>
<td>GE</td>
<td>General Elective</td>
<td>3</td>
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<td>GE</td>
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<td>GE</td>
<td>General Elective</td>
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<td>GE</td>
<td>General Elective</td>
<td>3</td>
<td>GE</td>
<td>General Elective</td>
<td>3</td>
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</tbody>
</table>

*Students need to submit graduation application in the 7th term.*

<table>
<thead>
<tr>
<th>Total units</th>
<th>15</th>
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</thead>
<tbody>
<tr>
<td>Total units</td>
<td>15</td>
</tr>
</tbody>
</table>

- This degree progression plan is to be used in conjunction with the academic catalog and degree progress report.
- Students should see an academic advisor regularly to confirm their academic progress.
- Students must see an academic advisor before enrollment for the 7th term in preparation for graduation.
- Many courses have prerequisites. Please check the academic catalog for prerequisite and placement information.

9. For undergraduate plans, will this requirement be a student individualized plan*? X no

☐ yes

*A Student Individualized Plan is an academic requirement that varies by student, such as the 15-unit BAIS focus, for which coursework requirements are established by the student in consultation with the advisor.

If yes, the academic unit listed at the top of this form hereby takes responsibility for providing complete information about each student's individual requirements for the degree audit system.

10. For undergraduate plans, will a milestone** be used to:

X a. verify satisfactory completion of a non course requirement (PPL seminar).

☐ b. indicate admission to a major.

☐ c. will not be used.

**A Milestone is used to record noncourse requirements, such as the HRM 800-hour work experience requirement or admission to Business Major status.

If yes, the academic unit listed at the top of this form hereby takes responsibility for maintaining the milestone and keeping individual student records up to date.

11. Please list the Learning Outcomes of the Plan/Subplan

In the best tradition of the liberal arts, the program equips students to be citizens and leaders in democratic society. At the same time it prepares students for advanced study leading to careers in law and public service. The program combines scientific and historical study of economic and political institutions with philosophical analysis, ethical reflection, and logical rigor. The program requires courses from majors correlated with the highest performance on standardized graduate tests of verbal, quantitative, and analytic skills, such as the GRE, LSAT, and MCAT.

Graduates understand the moral foundations of a market economy and the role of political authority in such an economy. Graduates understand competing conceptions of freedom that characterize exchange in a market and competing justifications for private ownership of the
objects of exchange. Graduates are prepared to assume social responsibilities, understand the international political economy, and make ethical decisions.

Graduates will have mastered a number of skills and acquired a number of traits in the course of their undergraduate program. These are set out below.

Problem Solving
- Micro- and macro-economic methods of analysis
- Statistical methods of analysis
- Historical methods of analysis
- Methods of political science
- Argument identification and evaluation
- Decision theory
- Ethical reflection

Communication

Writing and making salient presentations clearly, concisely, effectively, and interestingly using appropriate technology.

Social Interaction

Experienced in group discussions with students, professors, and professionals. Skill at getting important things done effectively in group efforts, and ability to influence others in a positive and responsible manner.

Self-management

Energy, perseverance and creativity. Self-motivated with appropriate assertiveness. Concern to excel and seek improvement. Set goals and develop time management skills. Create value in personal and organizational relationships. Be competent in job-finding and career-enhancing skills.

Ethical Judgment

Judge competing value systems in personal, legal, political, economic and historical frameworks by analysis of validity of appropriate arguments and truth of appropriate premises.

Global and Environmental

Act with understanding and sensitivity to cultural diversity and the interdependence of global communities. Have an appreciation for the global environment in which political and legal decisions are made. Act with informed awareness of contemporary issues and their historical contexts.

12. Justification for proposal. Please indicate how past assessments of student learning prompted proposed changes.

This course meets a need assessed on the basis of alumni interviews, graduating senior interviews, department meetings, meetings with collaborating department and
college representatives at NAU, discussions with the philosophy department at UA, and examination of peer programs at English-speaking universities around the world.

13. If this academic plan/subplan will require additional faculty, space, or equipment, how will these requirements be satisfied?

The program requires one new upper-division PHI course and another new JWR course in Philosophy. Philosophy has identified tenured faculty able to teach these courses. Philosophy will provide for instructional needs without the need for additional resources by eliminating an under-enrolled JWR (PHI 342W History of Contemporary Analytic Philosophy) and reducing the number of topics currently offered under the rubric of PHI 325 (Topics in Ethics). No program fees are required.

14. Will this academic plan/subplan affect other majors, liberal studies course offerings, plans/subplans, curricula, or enrollment at NAU?

If so, attach supporting documentation from the affected departments/units and college dean.

See attached letters of support from HIS, FCB, PIA, MAT, and HON.

15. Will present library holdings support this academic plan/subplan?

Yes

Certifications

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>George Radiation</td>
<td>4-13-10</td>
</tr>
<tr>
<td>Chair of college curriculum committee</td>
<td>Date</td>
</tr>
<tr>
<td>Dean of college</td>
<td>4-13-10</td>
</tr>
</tbody>
</table>

For committee use only

For University Curriculum Committee | Date

Action taken: [ ] approved as submitted [X] approved as modified

Attached are letters of support from FCB, HIS, HON, MAT, and. PIA.
PLACEMENT ISSUES:

Getting students correct placement:
Placement is based on when student took the test:

These changes:

- ACT of 17 - 32 take ENG 105 (new change 17-29)
- ACT 33+ take ENG 205 (new change 30-36)
- SAT 340 - 710 take ENG 105 (new change 340-690)
- SAT 720 - 800 take ENG 205 (new change 700+)

- Would currently take effect for students taking the English Placement on 5/10/2010 or later
- Option: Could retro change the rules back one to two years (for students who took the exam in Jr/Sr year of high school) and rerun placement process to push these students into the higher placement group for ENG 205
  - Going back to 2008 would impact 51 currently active students who fall within these score ranges since May 2008, however several may already have taken English, so not directly impacted even with change
  - 2 students are 1104 Admit students; 1 student is an 1101 Admit Term

Applying New Placement to Appropriate Courses:
Which courses impacted:

ENG 105:

- Questions: Other disciplines requiring ENG 105 as foundation, if a student scores higher on SAT/ACT to place into ENG 205, will these courses still require ENG 105 or accept 205?

ENG 205:

Other Disciplines?

Honors impacts

Greg Glau – impacts on other disciplines

Shouldn't be any CC impacts

Students will simply get the additional credit (same issue with AP)

STAR impacts:

ENG 110, SCI111 – multicultural center – find out what they’re taking this summer (Jamie Patton)

Debbie Berktold will confirm which courses they’re taking
ADDITIONAL TEST CREDIT (2 units) ISSUES:

Test Transfer Rules:
Test Credit is based on rule date and articulation term that test credit is being applied

- Test Transfer Rules would need to be updated for Summer 2010 term begin date
- 1104 students would need to have their test credit processed and applied to summer term or later (regardless of test taken date)

Need queries to ID who has extra credit associated: AP, CLEP, add in IB, WRPLC and ACT/SAT new score ranges

OTHER ISSUES:

Degree Progress – Changes Fall to Fall
Will this impact students' Foundation Requirements?

ENG CRD 2.0
AP Addl Credit

How will DP handle both of these addl credits? Eric will confirm

Other Concerns?
Update Placement Cheat Sheet
Honors 190 and 191

ENG 101 → ENG 205 enrollment possible

- Impacts to ENG 101 transfer to generic ENG 100TR (DP impacts, etc.)
- Possibly 101TR/102TR

Actions:
Meet with Greg Glau
Academic Catalog
Degree Progress
Course Prereqs for Fall
Test Rules for Fall
Email to Greg for Fall changes, rather than summer
AAC/CARS – need to meet with Greg before the 24th to update

Review reports/SQL

Update Placement tables

Cheat Sheet

Are there CLEP changes? Did they already take place? Needs to be coordinated with ATFs and Univ in state

Fall 2011 earliest change possible following this business process

4/27/10
University Curriculum Committee
Proposal for New Course

1. Is this course being proposed for Liberal Studies designation? Yes x No
   If yes, route completed form to Liberal Studies.

2. New course effective beginning what term and year? (ex. Spring 2009,
   Summer 2009) See effective dates schedule.
   Spring 2011
   Fall 2010

3. College CEFNS 4. Academic Unit /Department BIOLOGY

5. Course subject/catalog number BIO 182L 6. Units/Credit Hours 1

7. Long course title
   UNITY OF LIFE II LABORATORY
   (max 100 characters including spaces)

8. Short course title (max. 30 characters including
   spaces)
   BIO 182 LAB

9. Catalog course description (max. 30 words, excluding requisites).
   Hands on experience with concepts introduced in BIO 182

10. Grading option: XX
    Letter grade □ Pass/Fail □ or Both □
    (If both, the course may only be offered one way for each respective section.)

11. Co-convened with
    11a. Date approved by UGC
    (Must be approved by UGC prior to bringing to UCC. Both course syllabi must be presented)

12. Cross-listed with
    (Please submit a single cross-listed syllabus that will be used for all cross-listed courses.)

13. May course be repeated for additional units? yes □ no x
    a. If yes, maximum units allowed?
    b. If yes, may course be repeated for additional units in the same term? yes □ no □
       (ex. PES 100)

14. Prerequisites (must be completed before proposed course) BIO 181, BIO 181L

15. Corequisites (must be completed with proposed course) BIO 182

16. Is the course needed for a new or existing plan of study
    (major, minor, certificate)? yes x no □
Name of plan?

B.S. Biology (extended major)
B.S. Biomedical Science (Extended Major)
B.S. Chemistry: Biochemistry (extended major)—ACS
B.S. Chemistry: Health Preprofessional
B.S. Chemistry: Health Preprofessional (extended major)
B.S. Chemistry: Forensic Chemistry and Criminalistics (extended major)
B.S. Computer Science (extended major)
B.S. Ed. Biology: Elementary Education (Extended Major)
B.S. Ed. General Science: Secondary Education (extended major)
B.S. Ed. Secondary Education: Earth Science (extended major)
B.S. Environmental Sciences: Biology (extended major)
B.S. Environmental Sciences: Environmental Administration and Policy (extended major)
B.S. Environmental Sciences: Environmental Communication (extended major)
B.S. Environmental Sciences: Environmental Management (extended major)
B.S. Exercise Science (extended major)
B.S. Geology: Paleontology (extended major)
B.S. Microbiology (extended major)
B.S. F. Forestry (extended major)
Minor Biology

Note: If required, a new plan or plan change form must be submitted with this request.

17. Is a potential equivalent course offered at a community college (lower division only)   yes X no □
   If yes, does it require listing in the Course Equivalency Guide?   yes X no □
   Please list, if known, the institution and subject/catalog number of the course

18. Names of current faculty qualified to teach this course:   ALL FACULTY

19. Justification for new course, including unique features if applicable. (Attach proposed syllabus in the approved university format).

   BIO 182 has always included a lab which counted for 25% of the grade in the four-credit course. This proposal simply separates the lab from the lecture for ease of scheduling and reduced paperwork. The lab will now count as one hour and will be graded separately from the lecture.
### 35. Approvals

<table>
<thead>
<tr>
<th>Role</th>
<th>Signature</th>
<th>Date</th>
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<tbody>
<tr>
<td>Department Chair (if appropriate)</td>
<td>N. Waterski</td>
<td>3.31.10</td>
</tr>
<tr>
<td>Chair of college curriculum committee</td>
<td>P. Pollet</td>
<td>3/31/10</td>
</tr>
<tr>
<td>Dean of college</td>
<td></td>
<td>4/1/10</td>
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**For Committees use only**

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<tbody>
<tr>
<td></td>
<td>Ben Scott</td>
<td>4-27-10</td>
</tr>
</tbody>
</table>

**For University Curriculum Committee**

**Action taken:**

- [ ] Approved as submitted
- [ ] Approved as modified
Northern Arizona University  
Department of Biological Sciences - College of Engineering, Forestry, and Natural Sciences  
BIO 182 Lab - Unity of Life II  
Spring 2009 Syllabus

Room  Wettaw 127  
Lab Section  
Lab Time  

Laboratory Instructor  
Office Hours  
Office #  
Phone #  
523-  
e-mail  

Text: Required: *BIO 182 Biology Laboratory Manual*, customized from Vodopich and Moore, 8th edition  
Required: A blank composition notebook

Course Description: The lab emphasizes the unifying organismal principles of life on earth and provides an introduction to multicellular organisms, including algae, fungi, plants, and animals. Lab exercises involve observation of preserved and living specimens, microscope slides, and dissection.

**Tentative Schedule**

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<thead>
<tr>
<th>WEEK OF...</th>
<th>LAB</th>
<th>TOPIC</th>
<th>QUIZZES / DUE</th>
</tr>
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<tbody>
<tr>
<td>1/12</td>
<td>1</td>
<td>Taxonomy &amp; Systematics</td>
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<tr>
<td></td>
<td>3</td>
<td>The Microscope</td>
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<tr>
<td>1/19</td>
<td>25</td>
<td>Kingdom Protista: The Algae</td>
<td>Quiz 1 &amp; Syllabus Contract Due</td>
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<td>27</td>
<td>Kingdom Fungi</td>
<td>Quiz 2</td>
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<tr>
<td>2/2</td>
<td>28</td>
<td>Plant Kingdom: Liverworts, Mosses, &amp; Hornworts</td>
<td>Quiz 3</td>
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<td>29</td>
<td>Plant Kingdom: Seedless Vascular Plants</td>
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<td>2/9</td>
<td>30</td>
<td>Plant Kingdom: Gymnosperms</td>
<td>Quiz 4 / NOTEBOOK DUE</td>
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<td>2/16</td>
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<td>Progress Review Week – Open Lab</td>
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<td>2/23</td>
<td>31</td>
<td>Plant Kingdom: Angiosperms</td>
<td>Quiz 5</td>
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<td>32</td>
<td>Plant Anatomy: Vegetative Structure of Vascular Plants</td>
<td>Quiz 6</td>
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<td>33</td>
<td>Plant Physiology: Transpiration</td>
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<td>3/9</td>
<td>36</td>
<td>Animal Kingdom: Phyla Porifera &amp; Cnidaria</td>
<td>Quiz 7</td>
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<td>3/16</td>
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<td>SPRING BREAK – NO LABS</td>
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<tr>
<td>3/23</td>
<td>38</td>
<td>Animal Kingdom: Phyla Mollusca &amp; Annelida</td>
<td>Quiz 8</td>
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<td>Animal Kingdom: Phylum Arthropoda</td>
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<td>Practical Exam Open Lab</td>
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<td>Final Practical Exam</td>
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</table>
Attendance, Make-up, Late work, and Extra Credit Policy:
- Attendance at all classes and timely completion of all course work are required. Each student is expected to be in attendance for the entire laboratory period. If you miss a lab, you will not be able to make it up. You are responsible for all information given in class.
- Instructors are under no obligation to make special arrangements for you if you are absent, unless absence is documented by a NAU Institutional Excuse for a university sponsored activity approved by the Office of the Associate Provost – Undergraduate Studies.
- There is NO extra credit in this lab; No late assignments will be accepted.

Evaluation: Your lab grade is 25% of your overall course grade for BIO 182.
10 Quizzes (lowest score dropped) 15 points each 135 points
Syllabus Contract 10 points each 10 points
6 Lab Reports 10 points each 60 points
2 Notebook Evaluations 25 points each 50 points
Final Practical Examination 50 points 50 points
= 305 points total

Quizzes & Practical Exams: There will be 10 quizzes throughout the semester. Each quiz will be generated by your Laboratory Instructor, and will cover material from previous laboratories as well as the current laboratory. Your lowest quiz score will be dropped. A Final Practical exam will be given. No make-up quizzes or exams will be offered; you will receive a grade of zero on each quiz or exam that you miss.

Lab Reports: You are expected to complete every Lab Report. Each report will be worth 10 points. To receive full credit, you must have participated and thoroughly completed each lab, and put thoughtful work into the questions from each week’s lab. Your lab reports should be your own work and in your own words. Each report should be typed and submitted to your Instructor as a hard copy and is due when your Instructor collects it in class.

Notebook Evaluations: In your notebook, you will draw and label living and preserved specimens, slides, and structures, record data, observations, tables, and answer additional questions. Quality and completeness of Notebook entries (rather than artistic talent) will be evaluated for your grade.

Final Course Grades will be based on the percent of total points obtained in lab (25%) and lecture (75%). Lecturers will assign your final course grade based on (a) your performance in lecture and (b) an overall lab percentage calculated by your lab instructor. In order to receive credit for the course, you must be enrolled in both a lecture section and a laboratory section.

Academic dishonesty will result in a final grade of “F” in the course. According to the NAU Student Handbook: “Academic dishonesty…includes the following:
1. Plagiarism: any attempt to pass off other’s work as your own
2. Cheating: any attempt to gain an unfair, hidden advantage over one’s fellow students
3. Fabrication: any attempt to present information that is not true
4. Fraud: any attempt to deceive an instructor or administrative officer of the university.”

Northern Arizona University Policy Statements can be found at http://www4.nau.edu/stulife/handbook.htm.

Laboratory Manager: Dr. Emma Benenati serves as Laboratory Manager (BS 212, phone 523-9399, e-mail EmmaP.Benenati@nau.edu). Problems dealing with the laboratory, which cannot be handled by your Laboratory Instructor, can be taken to Dr. Benenati, who oversees all laboratory sections and assigns final grades. While Laboratory Instructors assign scores for various assignments, Dr. Benenati is solely responsible for assigning laboratory grades and may employ statistical adjustment of raw scores in order to ensure equitability among numerous sections taught by different instructors.

revised 8/08
University Curriculum Committee
Proposal for Course Change

1. Is this course a Diversity or Liberal Studies Course? Liberal X Diversity □ Both □


3. College CEFNS

4. Academic Unit/Department BIOLOGICAL SCIENCES

5. Current course subject/catalog number BIO 182

6. Current catalog title, course description and units. (Cut and paste from current on-line academic catalog www4.nau.edu/aii/AcademicCatalog/academiccatalogs.htm).

BIO 182 UNITY OF LIFE II: LIVES OF MULTICELLULAR ORGANISMS (4)
Introductory course for biology majors. Emphasizes the unifying organismal principles of life on earth. 3 hrs. lecture, 3 hrs. lab. Letter grade only. Course fee required.

Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing.

BIO 182 UNITY OF LIFE II: LIVES OF MULTICELLULAR ORGANISMS (3)
Introductory course for biology majors. Emphasizes the unifying organismal principles of life on earth. 3 hrs. lecture. Prerequisite BIO 181. Corequisite BIO 182L. Letter grade only. Course fee required.

7. Is this course required or an elective in any other plan (major, minor, certificate)? Yes Y No □
   If yes, explain and provide supporting documentation from the affected departments.

This change is not a substantive change in the course content. It simply separates the required lab from the lecture. The lab is still required but paperwork will be greatly reduced by not having to incorporate the lab grade into the course grade. It also simplifies scheduling for the department.

8. Does this change affect community college articulation? Yes Y No □
   If yes, explain how in the justification and provide supporting documentation from the affected institutions. It only affects the numbering by breaking Bio 182 into two separate courses.

Is the course a Common Course as defined by your Articulation Task Force? Yes Y No □
   If yes, has the change been approved by the Articulation Task Force? Yes □ No N

Revised 8/08
If this course has been listed in the *Course Equivalency Guide*, should that listing be left as is □ or be revised X.

If revised, how should it be revised? Both NAU Bio 182 (3) and Bio 182L (1) will be required to be equivalent to ASU Bio 187 (4). NAU Bio 182 (3) made equivalent to U of A Ecol 182R (3) and NAU Bio 182 L (1) made equivalent to U of A Ecol 182L (1).

**IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING**

<table>
<thead>
<tr>
<th>CURRENT</th>
<th>PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current course subject/catalog number</td>
<td>Proposed course subject/catalog number</td>
</tr>
<tr>
<td>Current number of units/credits 4</td>
<td>Proposed number of units/credits 3</td>
</tr>
<tr>
<td>Current Course Fee yes Y no □</td>
<td>If subject or catalog number change Move Y or Delete □</td>
</tr>
<tr>
<td>Current Grading Option*</td>
<td>Proposed Grading Option*</td>
</tr>
<tr>
<td>Letter Grade □ Pass/Fail □ or Both □</td>
<td>Letter Grade □ Pass/Fail □ or Both □</td>
</tr>
<tr>
<td>Current Repeat for additional Units</td>
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<td>Current Prerequisite</td>
<td>Proposed Prerequisite</td>
</tr>
<tr>
<td>Current Co-requisite none</td>
<td>Proposed Co-requisite Bio 182 L</td>
</tr>
<tr>
<td>Current Co-Convene with</td>
<td>Proposed Co-Convene with</td>
</tr>
<tr>
<td>Current Cross List with</td>
<td>Proposed Cross List with</td>
</tr>
</tbody>
</table>

Do you want to remove this course from either the Liberal Studies Course list and or the Diversity Course list? Liberal Studies □ Diversity □

9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

This change is not a substantive change in the course content. It simply separates the required lab from the lecture. The lab is still required but paperwork will be greatly reduced by not having to incorporate the lab grade into the course grade. It also simplifies scheduling for the department.

10. Approvals

Department Chair/ Unit Head (if appropriate)/ Date

Chair of college curriculum committee/Date

Dean of college/Date

Revised 8/08
Action taken: ✓ approved as submitted approved as modified
University Curriculum Committee
Proposal for New Course

1. Is this course being proposed for Liberal Studies designation? Yes [ ] No [X]
   If yes, route completed form to Liberal Studies.

   Fall 2010 [ ] Spring 2011 [X]

3. College: CEFNS
4. Academic Unit /Department: Biological Sciences

5. Course subject/catalog number: BIO 201L
6. Units/Credit Hours: 1

7. Long course title: BIO 201 HUMAN ANATOMY/PHYSIOLOGY I LAB
   (max 100 characters including spaces)

8. Short course title (max. 30 characters including spaces): BIO 201L

9. Catalog course description (max. 30 words, excluding requisites).
   Examines histology and human organ systems including integumentary, skeletal, muscular and nervous.

10. Grading option:
    Letter grade [X] Pass/Fail [ ] or Both [ ]
    (If both, the course may only be offered one way for each respective section.)

11. Co-convened with
    11a. Date approved by UGC
    (Must be approved by UGC prior to bringing to UCC. Both course syllabi must be presented)

12. Cross-listed with
    (Please submit a single cross-listed syllabus that will be used for all cross-listed courses.)

13. May course be repeated for additional units? Yes [ ] No [X]
    a. If yes, maximum units allowed?
    b. If yes, may course be repeated for additional units in the same term? Yes [ ] No [ ]
       (ex. PES 100)

14. Prerequisites (must be completed before proposed course)

15. Corequisites (must be completed with proposed course)
   BIO 201 (BIO 201 may either be a co- or pre-req)

16. Is the course needed for a new or existing plan of study
    (major, minor, certificate)?
    Yes [X] No [ ]

revised 8/08

1
Name of plan? B.S. Biomedical Science, BS. Biology: Secondary Education, BS Nursing, BS Exercise Science, BS Dental Hygiene, BS Health Science, BS Athletic Training

Note: If required, a new plan or plan change form must be submitted with this request. The plans that require Bio 201 will be changed administratively to read Bio 201:201L following the same procedure as was used when BIO 181 was split into a lab and lecture pairing.

17. Is a potential equivalent course offered at a community college (lower division only) yes no
If yes, does it require listing in the Course Equivalency Guide? yes no
Please list, if known, the institution and subject/catalog number of the course

18. Names of current faculty qualified to teach this course: David Pierotti, Kerry Henrickson, Stan Lindstedt

19. Justification for new course, including unique features if applicable. (Attach proposed syllabus in the approved university format).

The lab is severed from the lecture only for scheduling purposes. All components of the lab curriculum will remain the same.

For Official AIO Use Only:
Component Type
Consent
Topics Course

35. Approvals

Department Chair (if appropriate) 3.31.10
Date

Chair of college curriculum committee 3/31/10
Date

Dean of college

For Committees use only

For University Curriculum Committee 4.27.10
Date

Action taken: Approved as submitted

revised 8/08
Northern Arizona University
Dept. of Biological Sciences - College of Engineering, Forestry, and Natural Sciences
BIO 201 L - Human Anatomy and Physiology I Laboratory
Spring 2010 Syllabus

Room  BS 125  
Lab Section __________  
Lab Time ________

--------------------------
Laboratory Instructor  
--------------------------
Office Hours  

--------------------------
Office # __________  
Phone # 523-________

--------------------------
e-mail

Required: Composition notebook, blank pages.
Optional: Anatomy and Physiology Revealed 2.0 CD
Optional: Photographic Atlas for the Anatomy & Physiology, 6th Ed, Van De Graaff, Morton, and Crawley
Optional: SecondSlide Digital Pathology (free online registration)

Course Objective: To provide an introduction to the different tissues and anatomical terminology of the integument, muscular, skeletal, nervous, and sensory systems.

Please Note: This laboratory will occasionally incorporate real human bones and preserved specimens for dissection. If this poses a problem for religious, cultural, or ethical reasons, please inform your instructor. Plastic bones and models may be used to supplement for the real specimens.

* Lab schedule is subject to change.

Week  
Lab  
Topic  

Events  
1/11  
2, 3, 6 Organization of the Body; Microscopy;

Tissues  
1/18  
Martin Luther King Holiday Week - NO LABS

1/25  
7, 8 Integumentary System; Intro to the Skeletal System

Syllabus Contract Due  
2/1  
9 Appendicular Skeleton

2/8  
10 Axial Skeleton, Vertebrae, Ribs, Sternum, Hyoid

2/15  
11 Axial Skeleton - Skull

Quizzes  
/  

Quiz 1  
/  

Quiz 2  
/  

Quiz 3  
/  

Quiz 4  
/  

revised 8/08
2/22  12  Articulations

Notebooks due

3/1  21  Structure & Function of the Brain and Cranial Nerves

Mid-Term grades, Notebooks Returned

3/8  15, 16  Muscles of the Hip & Thigh; Muscles of the Leg & Foot

(W Drop Deadline 3/12 )

3/15  SPRING BREAK — NO LABS

3/22  13, 14  Muscles of Shoulder & Arm; Muscles of Forearm & Hand

3/29  17, 18  Muscles of the Head & Neck; Muscles of the Trunk

4/5  25-27  Taste & Smell; Eye & Vision; Ear, Hearing, & Balance

10

4/12  Open Labs to be scheduled

4/19  Final Practical Exam

Notebooks due

revised 8/08
Attendance, Make-up, Late work, and Extra Credit Policy: 

- Attendance at all classes and timely completion of all course work are required. Each student is expected to be in attendance for the entire laboratory period. If you miss a lab, you will not be able to make it up. You are responsible for all information given in class.

- Instructors are under no obligation to make special arrangements for you if you are absent, unless absence is documented by a NAU Institutional Excuse for a university sponsored activity approved by the Office of the Associate Provost – Undergraduate Studies.

- There is NO extra credit in this lab; No late assignments will be accepted.

**While class attendance is required per the above stated policy, please be cautious about attending class if you are feeling ill. Please inform your laboratory instructor by phone or email if you are feeling unwell; if you are experiencing flu-like symptoms, you should not attend class; please take precautions not to infect others, and seek medical attention if your symptoms worsen.**

**Evaluation:** Your lab grade is 25% of your overall course grade.

<table>
<thead>
<tr>
<th>Quiz Type</th>
<th>Points per Quiz</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 Quizzes (lowest quiz will be dropped)</td>
<td>15 points each</td>
</tr>
<tr>
<td>Syllabus Contract</td>
<td>10 points</td>
</tr>
<tr>
<td>6 Review Exercises</td>
<td>30 points each</td>
</tr>
<tr>
<td>2 Notebook Evaluations</td>
<td>10 points</td>
</tr>
<tr>
<td>Final Practical Exam</td>
<td>60 points</td>
</tr>
</tbody>
</table>

**Total** = 315 points

**Quizzes & Practical Exam:** There will be 10 quizzes throughout the semester. Each quiz will be generated by your Laboratory Instructor, and will cover material from previous laboratories as well as the current laboratory. A Final Practical exam will be given. **No make-up quizzes or exams will be offered; you will receive a grade of zero on each quiz or exam that you miss.**

**Review Exercises:** You are expected to complete every Review Exercise from every week of lab. Each collected and graded Review Exercise will be worth 10 points. To receive full credit, you must have participated and thoroughly completed each lab, and put thoughtful work into the questions from each week’s lab. Your Review Exercises should be your own work and in your own words. It is due when your Instructor collects it in class.

**Notebook Evaluations:** In your notebook, you will draw and label specimens, slides, and structures, record data, observations, tables, and answer additional questions. Quality and completeness of Notebook entries (rather than artistic talent) will be evaluated for your grade.

**Final Course Grades** will be based on the percent of total points obtained in lab (25%) and lecture (75%). Lecturers will assign your final course grade based on (a) your performance in lecture and (b) an overall lab percentage calculated by your lab instructor. In order to receive credit for the course, you must be enrolled in both a lecture section and a laboratory section.

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2. Cheating: any attempt to gain an unfair, hidden advantage over one’s fellow students
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**Laboratory Manager**: Dr. Robert Kellar serves as Laboratory Manager (Chem 426, phone 523-9311, e-mail Robert.Kellar@nau.edu). Problems dealing with the laboratory, which cannot be handled by your Laboratory Instructor, can be taken to Dr. Kellar, who oversees all laboratory sections and assigns final grades. While Laboratory Instructors assign scores for various assignments, Dr. Kellar is solely responsible for assigning laboratory grades and may employ statistical adjustment of raw scores in order to ensure equitability among numerous sections taught by different instructors.
University Curriculum Committee
Proposal for Course Change

1. Is this course a Diversity or Liberal Studies Course? □ Liberal Studies □ Diversity □ Both □


3. College CEFNS □ 4. Academic Unit/Department Biological Sciences □

5. Current course subject/catalog number BIO 201

6. Current catalog title, course description and units. (Cut and paste from current on-line academic catalog www4.nau.edu/allo/AcademicCatalog/academiccatalogs.htm).

BIO 201 HUMAN ANATOMY/PHYSIOLOGY I (4)
Integumentary, skeletal, muscular, nervous, and sensory systems in health and disease. 3 hrs. lecture, 3 hrs. lab. Letter grade only. Course fee required. Prerequisite: BIO 181 or BIO 181H

Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing.

BIO 201 HUMAN ANATOMY/PHYSIOLOGY I (3)
Integumentary, skeletal, muscular, nervous, and sensory systems in health and disease. 3 hrs. lecture, 3 hrs. lab. Letter grade only. Course fee required. Prerequisite: BIO 181 or BIO 181H

7. Is this course required or an elective in any other plan (major, minor, certificate)? □ Yes □ No
If yes, explain and provide supporting documentation from the affected departments.
BIO 201 is a pre-requisite course for a number of majors including nursing, dental hygiene, exercise science and pre-physics therapy. The purpose of this proposal is to unlink the lab and lecture portions of BIO 201 in a manner similar to what has already been done with BIO 181 and its lab. This change will benefit students who, for example, pass the lab but not the lecture portion of class. In the current system, those students must repeat the lab as well as the lecture. With this proposed change, students who pass lab but not lecture would be allowed to enroll in lecture only the following semester and not have to repeat the lab they have already passed. The lab will still be required. It is severed from the lecture only for scheduling purposes.

8. Does this change affect community college articulation? □ Yes □ No □
If yes, explain how in the justification and provide supporting documentation from the affected institutions.

Is the course a Common Course as defined by your Articulation Task Force? □ Yes □ No
If yes, has the change been approved by the Articulation Task Force? □ Yes □ No □

If this course has been listed in the Course Equivalency Guide, should that listing be left as is □ or be revised □

If revised, how should it be revised? BIO 201 and BIO 201L are both required in order to be equivalent to BIO 201 as listed in the equivalency index.

Revised 8/08
<table>
<thead>
<tr>
<th>CURRENT</th>
<th>PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current course subject/catalog number</td>
<td>Proposed course subject/catalog number</td>
</tr>
<tr>
<td>Current number of units/credits</td>
<td>Proposed number of units/credits</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
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<tr>
<td>Current Course Fee</td>
<td>If subject or catalog number change</td>
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<tr>
<td>yes ☑</td>
<td>Move ☐ or Delete ☐</td>
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<tr>
<td>Current Grading Option*</td>
<td>Proposed Grading Option*</td>
</tr>
<tr>
<td>Letter Grade ☒, Pass/Fail ☐ or Both ☐</td>
<td>Letter Grade ☐, Pass/Fail ☐ or Both ☐</td>
</tr>
<tr>
<td>Current Repeat for additional Units</td>
<td>Proposed Repeat for additional Units</td>
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<tr>
<td>Current Max number of units</td>
<td>Proposed Max number of units</td>
</tr>
<tr>
<td>Current Prerequisite</td>
<td>Proposed Prerequisite</td>
</tr>
<tr>
<td>BIO 181 or 181H</td>
<td>BIO 181 or 181H</td>
</tr>
<tr>
<td>Current Co-requisite</td>
<td>Proposed Co-requisite</td>
</tr>
<tr>
<td>BIO 201L</td>
<td>BIO 201L</td>
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<tr>
<td>Current Co-Convene with</td>
<td>Proposed Co-Convene with</td>
</tr>
<tr>
<td>Current Cross List with</td>
<td>Proposed Cross List with</td>
</tr>
</tbody>
</table>

Revised 8/08
Do you want to remove this course from either the Liberal Studies Course list and or the Diversity Course list? Liberal Studies ☐ Diversity ☐

9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

Assessment was not the impetus for the change. The lab will still be required. It is severed from the lecture only for scheduling purposes, following the same rationales as were given for the severing of BIO 181 and its lab several years ago. Some of these rationales include:

Bio 201L has been taught separately since its inception and the grade has been integrated into the overall grade for Bio 201 (lab is worth 25% of the course grade). Every semester we have students who do poorly in either the lecture or lab and want to take only that part over. However, because LOUIE does not allow enrollment in lecture and lab separately, students are forced to repeat that portion of the course which they have already successfully completed. Enrollment demand is extremely high for BIO 201 and is limited by the number of seats available in the lab. Unlinking the lecture and lab will free lab space up and permit higher student enrollment in the lecture portion of the course (this is the portion with which students have more difficulty).

It will have several additional benefits.

1) Since the course grade was formerly based on 25% laboratory performance and 75% lecture performance, students had difficulty figuring out exactly where they stood in the course overall. They were often not aware of their lab grade so could not project how they were truly doing overall. This will simplify the grading.

2) Labs are taught and graded by TAs. Lecture instructors often had to wait, sometimes until the last day of grade submission, for a TA to turn in their grades. This created a mad scramble to get the grades entered into the computer, the overall grade calculated, and the report filed. This created undue stress; remember that each section of Bio 201 lecture has 150-200 students.

10. Approvals

[Signature] 3.31.10

Department Chair/ Unit Head (if appropriate)/ Date

[Signature] 3/31/10

Chair of college curriculum committee/Date

[Signature] 4/1/10

Dean of college/Date

For Committee use only

[Signature] 4/27/10

For University Curriculum Committee/Date

Action taken: √ approved as submitted  approved as modified
1. Is this course being proposed for Liberal Studies designation? Yes ☐ No ☒
   If yes, route completed form to Liberal Studies.

   Fall 2010 ☒ Spring 2011 ☐

3. College CEFNS 4. Academic Unit /Department Biological Sciences

5. Course subject/catalog number 202L

6. Units/Credit Hours 1

7. Long course title BIO 202 HUMAN ANATOMY/PHYSIOLOGY II LAB
   (max 100 characters including spaces)

8. Short course title (max. 30 characters including spaces) BIO 202 Lab

9. Catalog course description (max. 30 words, excluding requisites).
   Examines human organ systems including endocrine, cardiovascular, immune, respiratory, urinary, digestive and reproductive.

10. Grading option:
    Letter grade ☒ Pass/Fail ☐ or Both ☐
    (If both, the course may only be offered one way for each respective section.)

11. Co-convened with 11a. Date approved by UGC
    (Must be approved by UGC prior to bringing to UCC. Both course syllabi must be presented)

12. Cross-listed with
    (Please submit a single cross-listed syllabus that will be used for all cross-listed courses.)

13. May course be repeated for additional units? yes ☐ no ☒
    a. If yes, maximum units allowed?
    b. If yes, may course be repeated for additional units in the same term? yes ☐ no ☒
    (ex. PES 100)

14. Prerequisites (must be completed before proposed course)
    BIO 201:201L

15. Corequisites (must be completed with proposed course)
    BIO 202 (BIO 202 may either be a co- or pre-req)

16. Is the course needed for a new or existing plan of study (major, minor, certificate)? yes ☒ no ☐
B.S. Biomedical Science, BS. Biology: Secondary Education, BS Nursing, BS Exercise Science, BS Dental Hygiene, BS Health Science, BS Athletic Training

Note: If required, a new plan or plan change form must be submitted with this request. The plans that require Bio 202 will be changed administratively to read Bio 202:202L following the same procedure as was used when BIO 181 was split into a lab and lecture pairing.

17. Is a potential equivalent course offered at a community college (lower division only)?
   If yes, does it require listing in the Course Equivalency Guide?
   Please list, if known, the institution and subject/catalog number of the course
   [Yes/No]

18. Names of current faculty qualified to teach this course: David Pierotti, Kerry Henrickson, Stan Lindstedt

19. Justification for new course, including unique features if applicable. (Attach proposed syllabus in the approved university format).

   The lab is severed from the lecture only for scheduling purposes. All components of the lab curriculum will remain the same.

For Official AIO Use Only:
Component Type
Consent
Topics Course

35. Approvals

   Department Chair (if appropriate) [Signature] 3/31/10
   Chair of college curriculum committee [Signature] 3/31/10
   Dean of college [Signature] 4/1/10

   For Committees use only

   For University Curriculum Committee [Signature] 4/27/10

Action taken: [Check the appropriate box] Approved as submitted

revised 8/08
Northern Arizona University  
Dept. of Biological Sciences - College of Engineering, Forestry, and Natural Sciences  
BIO 202 L - Human Anatomy and Physiology II Laboratory  
Spring 2010 Syllabus

Room _______ BS 124 _______ Lab Section _________ Lab Time ________

Laboratory Instructor ___________________________ Office Hours ___________________________

Office ___________________________ Phone # ______ 523- ______ e-mail ___________________________

Texts: **Required:** Anatomy & Physiology Laboratory Manual: The Unity of Form and Function,  
**Required:** Anatomy and Physiology Revealed 2.0 CD  
**Required:** Composition notebook, blank pages.  
**Optional:** Photographic Atlas for Anatomy & Physiology, 6th Ed., Van De Graaff, Morton, and Crawley

**Course Objective:** To provide an introduction to the different tissues and anatomical terminology of the endocrine, cardiovascular, circulatory, lymphatic, respiratory, digestive, urinary, and reproductive systems.  
**Please Note:** This laboratory will occasionally incorporate real human bones and preserved specimens for dissection. If this poses a problem for religious, cultural, or ethical reasons, please inform your instructor. Plastic bones and models may be used to supplement for the real specimens.  
*Lab Schedule subject to change.

**Tentative Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Lab Quizzes/Notebook</th>
<th>Topic</th>
<th>Quiz/Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/11</td>
<td>2, 3, 6, 28</td>
<td>Organs, Systems, &amp; Organization of the Body; Microscopy; Tissues; Endocrine System</td>
<td></td>
</tr>
<tr>
<td>1/18</td>
<td>29, 30</td>
<td>Blood Cells, Blood Tests &amp; Typing</td>
<td>Quiz 1</td>
</tr>
<tr>
<td></td>
<td>1 &amp; Syllabus Contract Due</td>
<td></td>
<td></td>
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<tr>
<td>1/25</td>
<td>31</td>
<td>Structure of the Heart</td>
<td>Quiz 2</td>
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<tr>
<td>2/1</td>
<td>32</td>
<td>Electrical Conductivity of the Heart</td>
<td>Quiz 3</td>
</tr>
<tr>
<td>2/8</td>
<td>34, 35</td>
<td>Arteries of the Upper Body; Arteries of the Lower Body</td>
<td>Quiz 4</td>
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<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/15</td>
<td>36, 38</td>
<td>Veins, Blood Vessels &amp; Blood Pressure</td>
<td>Quiz 5</td>
</tr>
</tbody>
</table>

revised 8/08
2/22 37 Functions of Vessels, Lymphatic System
6/ Notebooks Due

3/1 39, 40 Structure of the Respiratory System; Respiratory Function, Breathing, Respiration
Notebooks Returned

term Grades-

3/8 44, 45 Urinary System; Urinalysis

3/15 SPRING BREAK – NO LABS

3/22 42 Anatomy of the Digestive System

3/29 47 Female Reproductive System

4/5 46 Male Reproductive System

10/ Notebooks Due

4/12 Practical Exam Review – Open Lab
Notebooks Returned

4/19 Practical Exam

4/26 Open Lab / Lab Grades Posted / Return Notebooks
Attendance, Make-up, Late work, and Extra Credit Policy:
- Attendance at all classes and timely completion of all course work are required. Each student is expected to be in attendance for the entire laboratory period. If you miss a lab, you will not be able to make it up. You are responsible for all information given in class.

- Instructors are under no obligation to make special arrangements for you if you are absent, unless absence is documented by a NAU Institutional Excuse for a university sponsored activity approved by the Office of the Associate Provost – Undergraduate Studies.
- There is NO extra credit in this lab; No late assignments will be accepted.

Evaluation: Your lab grade is 25% of your overall course grade.
10 Quizzes (lowest score dropped) 15 points each 135 points
Syllabus Contract 10 points 10 points
6 Review Exercises 30 points each 60 points
2 Notebook Evaluations 50 points 50 points
Practical Exam = 315 points total

Quizzes & Practical Exams: There will be 10 quizzes throughout the semester. Each quiz will be generated by your Laboratory Instructor, and will cover material from previous laboratories as well as the current laboratory. Your lowest quiz score will be dropped. A Final Practical exam will be given. No make-up quizzes or exams will be offered; you will receive a grade of zero on each quiz or exam that you miss.

Review Exercises: You are expected to complete every Review Exercise from every week of lab. Each collected and graded Review Exercise will be worth 10 points. To receive full credit, you must have participated and thoroughly completed each lab, and put thoughtful work into the questions from each week’s lab. Your Review Exercises should be your own work and in your own words. It is due when your Instructor collects it in class.

Notebook Evaluations: In your notebook, you will draw and label specimens, slides, and structures, record data, observations, tables, and answer additional questions. Quality and completeness of Notebook entries (rather than artistic talent) will be evaluated for your grade.

Final Course Grades will be based on the percent of total points obtained in lab (25%) and lecture (75%). Lecturers will assign your final course grade based on (a) your performance in lecture and (b) an overall lab percentage calculated by your lab instructor. In order to receive credit for the course, you must be enrolled in both a lecture section and a laboratory section.

Academic dishonesty will result in a final grade of “F” in the course. According to the NAU Student Handbook: “Academic dishonesty…includes the following:
1. Plagiarism: any attempt to pass off other’s work as your own
2. Cheating: any attempt to gain an unfair, hidden advantage over one’s fellow students
3. Fabrication: any attempt to present information that is not true
4. Fraud: any attempt to deceive an instructor or administrative officer of the university.”

Northern Arizona University Policy Statements can be found at http://www4.nau.edu/stulife/handbook.htm.

revised 8/08
Laboratory Manager: Dr. Emma Benenati serves as Laboratory Manager (BS 212, phone 523-9399, e-mail EmmaP.Bennenati@nau.edu). Problems dealing with the laboratory, which cannot be handled by your Laboratory Instructor, can be taken to Dr. Benenati, who oversees all laboratory sections and assigns final grades. While Laboratory Instructors assign scores for various assignments, Dr. Benenati is solely responsible for assigning laboratory grades and may employ statistical adjustment of raw scores in order to ensure equity among numerous sections taught by different instructors.
# University Curriculum Committee
## Proposal for Course Change

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is this course a Diversity or Liberal Studies Course?</td>
<td>Liberal Studies □ Diversity □ Both □</td>
</tr>
<tr>
<td>2. Course change effective beginning of what term and year?</td>
<td>Fall 2010 Spring 2011</td>
</tr>
<tr>
<td>3. College</td>
<td>CEFNS</td>
</tr>
<tr>
<td>4. Academic Unit/Department</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>5. Current course subject/catalog number</td>
<td>BIO 202</td>
</tr>
<tr>
<td>6. Current catalog title, course description and units. (Cut and paste from current on-line academic catalog <a href="http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm">www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm</a>.)</td>
<td>BIO 202 HUMAN ANATOMY/PHYSIOLOGY I (4) Body fluid, cardiovascular, digestive, respiratory, urinary, reproductive, and endocrine systems in health and disease. 3 hrs. lecture, 3 hrs. lab. Letter grade only. Course fee required.</td>
</tr>
<tr>
<td>Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing.</td>
<td>BIO 202 HUMAN ANATOMY/PHYSIOLOGY I (3) Body fluid, cardiovascular, digestive, respiratory, urinary, reproductive, and endocrine systems in health and disease. 3 hrs. lecture, 3 hrs. lab. Corequisite BIO 202L. Letter grade only. Course fee required.</td>
</tr>
<tr>
<td>7. Is this course required or an elective in any other plan (major, minor, certificate)? Yes ☑ No ☐</td>
<td></td>
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<tr>
<td>If yes, explain and provide supporting documentation from the affected departments.</td>
<td></td>
</tr>
<tr>
<td>BIO 202 is a pre-requisite course for a number of majors including nursing, dental hygiene, exercise science and pre-physical therapy. The purpose of this proposal is to unlink the lab and lecture portions of BIO 202 in a manner similar to what has already been done with BIO 181 and its lab. This change will benefit students who, for example, pass the lab but not the lecture portion of class. In the current system, those students must repeat the lab as well as the lecture. With this proposed change, students who pass lab but not lecture would be allowed to enroll in lecture only the following semester and not have to repeat the lab they have already passed. The lab will still be required. It is severed from the lecture only for scheduling purposes.</td>
<td></td>
</tr>
<tr>
<td>8. Does this change affect community college articulation? Yes ☑ No ☐</td>
<td></td>
</tr>
<tr>
<td>If yes, explain how in the justification and provide supporting documentation from the affected institutions.</td>
<td></td>
</tr>
<tr>
<td>It only affects the nummery by breaking BIO 202 into two courses.</td>
<td></td>
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<tr>
<td>Is the course a Common Course as defined by your Articulation Task Force? Yes ☑ No ☐</td>
<td></td>
</tr>
<tr>
<td>If yes, has the change been approved by the Articulation Task Force? Yes ☑ No ☐</td>
<td></td>
</tr>
<tr>
<td>If this course has been listed in the Course Equivalency Guide, should that listing be left as is ☐ or be revised ☑</td>
<td></td>
</tr>
<tr>
<td>If revised, how should it be revised? BIO 202 and BIO 202L are both required in order to be equivalent to BIO 202 as listed in the equivalency index.</td>
<td></td>
</tr>
</tbody>
</table>

Revised 8/08
IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING

<table>
<thead>
<tr>
<th>CURRENT</th>
<th>PROPOSED</th>
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<tbody>
<tr>
<td>Current course subject/catalog number</td>
<td>Proposed course subject/catalog number</td>
</tr>
<tr>
<td>Current number of units/credits</td>
<td>Proposed number of units/credits</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Current Course Fee</td>
<td>If subject or catalog number change</td>
</tr>
<tr>
<td>yes ☐</td>
<td>Move ☐ or Delete ☐</td>
</tr>
<tr>
<td>Current Grading Option*</td>
<td>Proposed Grading Option*</td>
</tr>
<tr>
<td>Letter Grade ☒ Pass/Fail ☐ or Both ☐</td>
<td>Letter Grade ☐ Pass/Fail ☐ or Both ☐</td>
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<tr>
<td>Current Repeat for additional Units</td>
<td>Proposed Repeat for additional Units</td>
</tr>
<tr>
<td>Current Max number of units</td>
<td>Proposed Max number of units</td>
</tr>
<tr>
<td>Current Prerequisite</td>
<td>Proposed Prerequisite</td>
</tr>
<tr>
<td>BIO 201</td>
<td>BIO 201:201L</td>
</tr>
<tr>
<td>Current Co-requisite</td>
<td>Proposed Co-requisite</td>
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<tr>
<td></td>
<td>BIO 202L</td>
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<tr>
<td>Current Co-Convene with</td>
<td>Proposed Co-Convene with</td>
</tr>
<tr>
<td>Current Cross List with</td>
<td>Proposed Cross List with</td>
</tr>
</tbody>
</table>

Revised 8/08
Do you want to remove this course from either the Liberal Studies Course list and or the Diversity Course list? Liberal Studies ☐ Diversity ☐

9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

Assessment was not the impetus for the change. The lab will still be required. It is severed from the lecture only for scheduling purposes, following the same rationales as were given for the severing of BIO 181 and its lab several years ago. Some of these rationales include:

Bio 202L has been taught separately since its inception and the grade has been integrated into the overall grade for Bio 202 (lab is worth 25% of the course grade). Every semester we have students who do poorly in either the lecture or lab and want to take only that part over. However, because LOUIE does not allow enrollment in lecture and lab separately, students are forced to repeat that portion of the course which they have already successfully completed. Enrollment demand is extremely high for BIO 202 and is limited by the number of seats available in the lab. Unlinking the lecture and lab will free lab space up and permit higher student enrollment in the lecture portion of the course (this is the portion with which students have more difficulty).

It will have several additional benefits.

1) Since the course grade was formerly based on 25% laboratory performance and 75% lecture performance, students had difficulty figuring out exactly where they stood in the course overall. They were often not aware of their lab grade so could not project how they were truly doing overall. This will simplify the grading.

2) Labs are taught and graded by TAs. Lecture instructors often had to wait, sometimes until the last day of grade submission, for a TA to turn in their grades. This created a mad scramble to get the grades entered into the computer, the overall grade calculated, and the report filed. This created undue stress; remember that a section of Bio 202 lecture has 150-200 students.

10. Approvals

Department Chair/Unit Head (if appropriate)/ Date

Chair of college curriculum committee/Date

Dean of college/Date

For Committee use only

For University Curriculum Committee/Date

Action taken: ☑ approved as submitted ☑ approved as modified

Revised 8/08
1. Is this course being proposed for Liberal Studies designation? Yes ☑ No ☐
   If yes, route completed form to Liberal Studies.


3. College CEFNS

4. Academic Unit/Department CHM

5. Course subject/catalog number CHM 130L

6. Units/Credit Hours 1

7. Long course title Fundamental Chemistry Lab
   (max 100 characters including spaces)

8. Short course title (max. 30 characters including spaces) Fundamental Chemistry Lab

9. Catalog course description (max. 30 words, excluding requisites).

   Introduces general laboratory practices and uses the scientific method to solve problems of a chemical nature. Introduces green chemistry principles.

10. Grading option:
   Letter grade ☑ Pass/Fail ☐ or Both ☐
   (If both, the course may only be offered one way for each respective section.)

11. Co-convened with

11a. Date approved by UGC
   (Must be approved by UGC prior to bringing to UCC. Both course syllabi must be presented)

12. Cross-listed with
   (Please submit a single cross-listed syllabus that will be used for all cross-listed courses.)

13. May course be repeated for additional units? yes ☐ no ☑
   a. If yes, maximum units allowed?
   b. If yes, may course be repeated for additional units in the same term? yes ☐ no ☐
   (ex. PES 100)

14. Prerequisites (must be completed before proposed course) CHM 130

15. Corequisites (must be completed with proposed course) CHM 130

16. Is the course needed for a new or existing plan of study (major, minor, certificate)? yes ☐ no ☑
   Name of plan?

   Note: If required, a new plan or plan change form must be submitted with this request.
17. Is a potential equivalent course offered at a community college (lower division only)  
   If yes, does it require listing in the Course Equivalency Guide?  
   Please list, if known, the institution and subject/catalog number of the course  
   yes ☒ no ☐  
   yes ☒ no ☐  
   [Maricopa CC, CHM 130L, CHM 151L will]  
   Change to CHM 130 + CHM 151L  

18. Names of current faculty qualified to teach this course:  
   Brandon Curickshank, Antony Hascall,  
   Jessica VandenPlas, John Nauman  

19. Justification for new course, including unique features if applicable. (Attach proposed  
   syllabus in the approved university format).  

   CHM 130L is designed to accompany CHM 130 (Fundamental Chemistry). Currently  
   CHM 130 students are required to take CHM 151L, a lab designed for chemistry majors. This  
   lab will focus on more general lab skills and the scientific method. It will also be designed as a  
   “green” chemistry lab, using common household products and foods to investigate basic  
   chemistry principles.  

For Official AIO Use Only:  
Component Type  
Consent  
Topics Course  

35. Approvals  

[Signatures and dates]  

For Committees use only  

[Signature and date]  

Action taken:  

[Signature] Approved as submitted  
[Signature] Approved as modified
CHM 130L-Fundamental Chemistry Lab Master Syllabus

General Information
Semester offered: Fall only
Location: Chemistry Building 20 (Rooms 336 and 339)
Clock Hours: 2.5 hours per week
Credit Hours: 1 unit
Instructor's name/address/office hours: TBD

Course Prerequisite or co-requisite: CHM130 or CHM 151

Catalog Description. Introduces general laboratory practices and uses the scientific method to solve problems of a chemical nature. Introduces green chemistry principles.

Course Description. The CHM130 lab is designed for students who require only one semester of chemistry or who plan to also take CHM 230 (one-semester organic). CHM 130L (or CHM151L) is a prerequisite for CHM 230L. Principles, practices, and applications of contemporary laboratory chemistry are addressed. This lab has been developed in accord with the principles of "green" chemistry. As defined by the American Chemical Society, green chemistry is the "design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances." To this end, the lab uses common household products and foods rather than harsh chemicals to introduce the fundamental practices and concepts of laboratory science.

Liberal Studies Information

Mission. CHM 151L addresses the mission of the liberal studies program by asking students to reflect upon and practice actions that reflect environmental stewardship and responsibility.

Distribution Block: Science. CHM 130L offers 1 hour of Science [LAB] credit. If taken with CHM 130 or CHM 151, students will receive 4 hours of Science/Applied Science credit (Science [SAS]). Students will learn the techniques of scientific inquiry and develop an understanding of chemical processes through the application of the scientific method. Students will have hands-on experience using the scientific method to describe, quantify, and solve problems of a chemical nature including processes that have direct impact on the environment (such as acid/base chemistry) and learn the principles of green chemistry.

Essential Skill: Scientific Reasoning. CHM 130L addresses the skill of Scientific Reasoning. Students will be asked to develop and test hypotheses based on scientific observations and measurements. Students will be asked to explain their results based on fundamental principles of chemistry.

Student Learning Expectations/Outcomes

After completing CHM 130L, students will be able to do the following:
1. Describe the basic principles of "green" chemistry
2. Formulate hypotheses based on physical and chemical observations
3. Demonstrate knowledge of (a) basic laboratory skills and (b) the proper use of scientific instrumentation to test scientific hypotheses.
4. Collect and record data in properly maintained laboratory notebooks.
5. Communicate results of scientific investigations in lab reports that describe (a) the methods used to collect the data, (b) the results obtained, and (c) an interpretation and discussion of the results in light of fundamental chemical principles.

Course Structure and Approach: CHM130L will address chemistry—the science of change—through hands-on laboratory exercises. Using standard laboratory practice and equipment, students will measure, quantify, and describe the chemical properties of environmentally-friendly household products and foods to investigate and better understand the fundamental concepts of chemistry. Students will also be introduced to the basic principles of green chemistry.

Textbook and Required Materials. Introductory Chemistry Version 3 from eScience Labs (or similar green chemistry lab manual). Students must also purchase a lab notebook and safety glasses. (Note that goggles are not required.)

Tentative Outline of Experiments (some experiments will take 2 weeks)
1. Measurement of mass, volume, and density
2. Mixtures and Solutions
3. Atomic Theory and Structure: Light Spectrum
5. Chemical Reactions Part I
6. Chemical Reactions Part II (Metals and Oxidation)
7. Acids and Bases
8. Titration
9. Reaction Rates and Catalysts
10. The Ideal Gas Law
11. Stoichiometry and the determination of molar mass

Assessment of Learning Outcomes

Methods of Assessment. Your learning in each lab will be evaluated in 5 ways. The percentage (in parentheses) represents how each activity will be weighted in determining your final grade.

- Prelab exercise (10%) – to test your knowledge of lab safety and fundamental concepts
- Prelab quiz (10%) – to test your knowledge of green chemistry principles, basic laboratory skills, and lab safety
- Lab Performance (20%) – to evaluate your skills in using scientific apparatus
- Lab Notebook (10%) – to evaluate your ability to prepare and follow an experimental plan, develop an hypothesis, describe scientific observations, and record raw data.
- Lab Report (50%), a typed document, to evaluate your skills in describing your initial hypothesis, methods used, and results obtained and to interpret those data in accord with appropriate chemical principles

Grading System. Grades will be assigned as follows. Note that the instructor can lower but not raise the percentages required for a given grade:

90-100%  A
80-89%    B
70-79%    C
60-69%    D
<50%      F

Course Policies

Academic Dishonesty. The Department of Chemistry and Biochemistry strictly enforces the University’s policy on academic dishonesty. Sanctions imposed for academic dishonesty
include receiving partial or no credit on the item in question without the chance to improve the score, receiving an F for the course, or expulsion from the University. **Each student must do the pre-lab work, lab work and calculations individually. Using another student's unknown, unknown #, data, or results will be treated as academic dishonesty. In addition, if you repeat an experiment you must check out a new unknown from the prep stockroom. Using the same unknown number twice will be considered academic dishonesty. If other offenses are found in department or university records for other courses repeat cases of academic dishonesty will have serious consequences.**

**Makeup Labs.** You may attend another section of CHM 130L to make up a missed lab if you have been sick or miss a lab with an institutional excuse. To attend another lab section you must get your regular TA's approval to attend a makeup lab and they will fill out a "Make up lab slip". Take this slip to the TA of the lab you wish to attend to complete the makeup work. If there is enough space (less than 24 students) and equipment, you will be allowed to work in the lab at the instructor's or TA's discretion. The TA in the makeup lab will complete the slip and give it back to your regular TA. You may not attend make up labs if you fail to attend your normal lab section regularly.

**University Policies.** Safe Working and Learning Environment, Students with Disabilities, IRB, and Academic Integrity policies will be attached or referenced in the following Web site:

http://www2.nau.edu/academicadmin/UCCPolicy/plcystmt.html
Hello Marin -- The Liberal Studies Committee has approved CHM 130L under dist block of science/applied science and essential skill being scientific inquiry.

Thanks,
Linda

Dr. Linda Robyn, Ph.D.
Associate Professor
Department of Criminology and Criminal Justice
MEMORANDUM

TO: MARIN ROBINSON, CHAIR, CHEMISTRY & BIOCHEMISTRY, BOX 5698
FROM: JAMES ALLEN, EXECUTIVE DIRECTOR, SCHOOL OF FORESTRY
SUBJECT: CHM 130L

We understand that Chemistry and Biochemistry is proposing to add CHM 130L (Fundamental Chemistry Laboratory) to the chemistry curriculum in Fall 2010. This lab is intended for students enrolled in CHM 130 lecture (Fundamental Chemistry), a one-semester course designed for students in nursing, dental hygiene, secondary education (earth sciences), forestry, and other areas that need an overview of fundamental chemistry principles. Currently, students enrolled in CHM 130 are required to take CHM 151L, a lab designed for chemistry and other science majors, in part, because CHM 130L has not been offered. The proposed CHM 130 lab will be based on “green” principles and use common household products and foods rather than harsh chemicals. The course has been submitted to Liberal Studies for approval as a Science/Lab course.

We support the addition of CHM 130L to the chemistry curriculum. Moreover, after reviewing the syllabus for CHM 130L, we have decided to do the following with our affected plan. (Check one of the following options.)

(1) Plan: B.S.F. Forestry (extended major)

X Change the CHM 151L requirement to CHM 130L as follows:

<table>
<thead>
<tr>
<th>Current</th>
<th>Change to</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 130 and 151L (5 units)</td>
<td>CHM 130 and 130L (5 units)</td>
</tr>
</tbody>
</table>

Leave the requirement as is

Name (print) James A. Allen Signature James A. Allen
Date 2/26/10
MEMORANDUM

TO: MARIN ROBINSON, CHAIR, CHEMISTRY AND BIOCHEMISTRY, BOX 5698
FROM: MARJORIE REVEAL, CHAIR OF DENTAL HYGIENE
SUBJECT: CHM 130L

We understand that Chemistry and Biochemistry is proposing to add CHM 130L (Fundamental Chemistry Laboratory) to the chemistry curriculum in Fall 2010. This lab is intended for students enrolled in CHM 130 lecture (Fundamental Chemistry), a one-semester course designed for students in biology, nursing, dental hygiene, secondary education (earth sciences), forestry, and other areas that need an overview of fundamental chemistry principles. Currently, students enrolled in CHM 130 are required to take CHM 151L, a lab designed for chemistry and other science majors, in part, because CHM 130L has not been offered. The proposed CHM 130 lab will be based on “green” principles and use common household products and foods rather than harsh chemicals. The course has been submitted to Liberal Studies for approval as a Science/Lab course.

We support the addition of CHM 130L to the chemistry curriculum. Moreover, after reviewing the master syllabus for CHM 130L, we have decided to do the following with our affected plan. (Select one of the following options.)

Plan: B.S. Dental Hygiene (extended major)

☐ Change the CHM 151L requirement to CHM 130L as follows:

Current: CHM 130 and 151L (5 units)  Change to: CHM 130 and 130L (5 units)

☐ Leave the requirement as is

Name (printed)  MARJORIE REVEAL  Signature/date  MARJORIE REVEAL

I am assuming that this will not require a program change through NAU LCC.

Thank you.
MEMORANDUM

TO: MARIN ROBINSON, CHAIR, CHEMISTRY & BIOCHEMISTRY, BOX 5698
FROM: DEBERA THOMAS, DEAN, SCHOOL OF NURSING
SUBJECT: CHM 130L

We understand that Chemistry and Biochemistry is proposing to add CHM 130L (Fundamental Chemistry Laboratory) to the chemistry curriculum in Fall 2010. This lab is intended for students enrolled in CHM 130 lecture (Fundamental Chemistry), a one-semester course designed for students in nursing, dental hygiene, secondary education (earth sciences), forestry, and other areas that need an overview of fundamental chemistry principles. Currently, students enrolled in CHM 130 are required to take CHM 151L, a lab designed for chemistry and other science majors, in part, because CHM 130L has not been offered. The proposed CHM 130 lab will be based on “green” principles and use common household products and foods rather than harsh chemicals. The course has been submitted to Liberal Studies for approval as a Science/Lab course.

We support the addition of CHM 130L to the chemistry curriculum. Moreover, after reviewing the master syllabus for CHM 130L, we have decided to do the following with our affected plan(s). (Select one of the following options.)

(1) B.S. Nursing (extended major)

<table>
<thead>
<tr>
<th>Change</th>
<th>Change to</th>
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<tbody>
<tr>
<td><img src="image" alt="X" /> Change the CHM 151L requirement to CHM 130L as follows:</td>
<td></td>
</tr>
<tr>
<td>Current:</td>
<td>Change to:</td>
</tr>
<tr>
<td>BIO 181:181L (or CHM 130 and 151L) (4-5 units)</td>
<td>BIO 181:181L (or CHM 130 and 130L) (4-5 units)</td>
</tr>
</tbody>
</table>

Leave the requirement as is

(2) B.S. Nursing: Option for Registered Nurses (extended major)

<table>
<thead>
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<td>BIO 181:181L (or CHM 130 and 130L) (4-5 units)</td>
</tr>
</tbody>
</table>

Leave the requirement as is

Name (print) Debera Thomas Signature/dated 3/1/10
MEMORANDUM

TO: MARIN ROBINSON, CHAIR, CHEMISTRY AND BIOCHEMISTRY, BOX 5698
FROM: MARIBETH VATWOOD, CHAIR, BIOLOGICAL SCIENCES
SUBJECT: CHM 130L

We understand that Chemistry and Biochemistry is proposing to add CHM 130L (Fundamental Chemistry Laboratory) to the chemistry curriculum in Fall 2010. This lab is intended for students enrolled in CHM 130 lecture (Fundamental Chemistry), a one-semester course designed for students in biology, nursing, dental hygiene, secondary education (earth sciences), forestry, and other areas that need an overview of fundamental chemistry principles. Currently, students enrolled in CHM 130 are required to take CHM 151L, a lab designed for chemistry and other science majors, in part, because CHM 130L has not been offered. The proposed CHM 130 lab will be based on “green” principles and use common household products and foods rather than harsh chemicals. The course has been submitted to Liberal Studies for approval as a Science/Lab course.

We support the addition of CHM 130L to the chemistry curriculum. Moreover, after reviewing the master syllabus for CHM 130L, we have decided to do the following with our affected plan. (Select one of the following options.)

Plan: B.S. Biology

_______ Change the CHM 151L requirement to CHM 130L as follows:

<table>
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<tbody>
<tr>
<td>CHM 130 and 151L (5 units)</td>
<td>CHM 130 and 130L (5 units)</td>
</tr>
</tbody>
</table>

✓ Leave the requirement as is

Name (printed) M. Watwood
Signature/date: 3.3.10
RE: CHM 130L

James Clifford Sample

Sent: Tuesday, March 30, 2010 1:17 PM
To: Marin Sands Robinson
Cc: Mary Reid

Hi Marin:

Thanks for letting me know. It seems okay to me. We will submit the plan change form. Has the lab change already been approved?

Jim
Professor of Geology
School of Earth Sciences and Environmental Sustainability
P O Box 4099 (mailing)
625 S Knoles Dr (delivery)
Flagstaff, AZ 86011-4099
USA
office phone: 928-523-0881
office room number: 13-A210
Fax: 928-523-9220
james.sample@nau.edu

From: Marin Sands Robinson
Sent: Tuesday, March 30, 2010 12:16 PM
To: James Clifford Sample
Cc: Debbie A Wildermuth
Subject: CHM 130L

Hi Jim,

I am not sure if you are the right person to contact or not. Please let me know if I should send this to someone else instead (like Mary??). Chemistry is now offering CHM 130L. It will be a "green chemistry" lab and is designed to be the lab that accompanies the CHM 130 lecture. The B.S. Ed Secondary Education: Earth Science (extended major) degree may be affected by this change. Right now the requirements state:

CHM 130 or 151 plus CHM 151L (5 units)

We are recommending that you change this to

CHM 130 and 130L OR CHM 151 and 151L (5 units).

Sound OK? An email reply should be fine. If you do want to change the requirements, you will need to submit a Plan Change. Sorry!

Cheers,
Marin

Dr. Marin S. Robinson
Professor and Chair of Chemistry and Biochemistry (CHM 122)
PO Box 5698
S. Beaver Street
Bldg 20, Room 125
Flagstaff, AZ 86011-5698
928.523.6295 (ph)
928.523.8111 (fax)
Liberal Studies approved for CU for Fall 2010:

ITA 201, 202
LAT 201, 202

-----Original Message-----
From: Linda Marie Robyn
Sent: Wednesday, March 17, 2010 12:36 PM
To: Nicole A Morrow
Cc: Shelly Ann Pleasants
Subject: CHM 130L

Hello Nicole and Shelly -- **CHM 130L** has been approved by Liberal Studies Committee with distribution block as Lab and essential skill as scientific inquiry.

Thanks,
Linda

Dr. Linda Robyn, Ph.D.
Associate Professor
Department of Criminology and Criminal Justice

-----Original Message-----
From: Linda Marie Robyn
Sent: Tuesday, March 09, 2010 5:37 PM
To: Nicole A Morrow
Cc: Shelly Ann Pleasants
Subject: MUS 396

Hello Nicole -- **MUS 396** "The Broadway Musical" has been approved by the Liberal Studies Committee in the AHI distribution block; essential skill is effective writing.

Thanks
Linda

Dr. Linda Robyn, Ph.D.
Associate Professor
Department of Criminology and Criminal Justice

-----Original Message-----
From: Linda Marie Robyn
Sent: Tuesday, March 30, 2010 12:03 PM
To: Nicole A Morrow; Shelly Ann Pleasants
Subject: DIS 304

Hello Nicole -- **DIS 304** has been approved by Liberal Studies for SPW and effective writing skill.
Thanks,
Linda

4-8-10

Linda, Thanks for the syllabus and clarification.

Nicole, Please disregard the previous approval of DIS 201 for the block of CU. It has now been approved for SPW instead. FYI, the skill remains Effective Writing.

Annette, I'll need a signed hard copy of the new SPW/EW proposal.

Thanks,

Shelly Pleasants
Program Coordinator
Northern Arizona University
Office of the vice provost for academic affairs Building 51, Room 201 Ph 928-523-1580 Fx 928-523-2344 Em shelly.pleasants@nau.edu

-----Original Message-----
From: Linda Marie Robyn
Sent: Wednesday, April 07, 2010 9:49 PM
To: Shelly Ann Pleasants
Subject: FW: Liberal Studies DIS 201, DIS 304

Hi Shelly -- Attached are syllabi from DIS 304 and 201. DIS 304 is not in question, but if you open and look at the DIS 201 proposal, you will see that it has indeed been changed from CU to SPW. I hope this answers your question.

Linda

From: Shelly Ann Pleasants
Sent: Monday, April 12, 2010 5:18 PM
To: Nicole A Morrow
Cc: Pamela Elizabeth Foti; Debbie A Wildermuth; Linda Marie Robyn
Subject: Delete CM 120 and PL 120 from LS

4-12-10

Hi Nicole,

Please delete CM 120 and PL 120 from Liberal Studies effective fall 2011.

Thanks,

Shelly Pleasants
Program Coordinator
Northern Arizona University
Office of the vice provost for academic affairs
Building 51, Room 201
Ph 928-523-1580
Fx 928-523-2344
Em shelly.pleasant@nau.edu

From: Linda Marie Robyn
Sent: Friday, April 23, 2010 11:58 AM
To: Nicole A Morrow
Cc: Shelly Ann Pleasant
Subject: PHI 345W

Hello Nicole and Shelly:

PHI 345W "Moral Foundations of Property and Markets" has been approved with a slight revision. Dist Block: AHI; Essential Skill: EW

Thanks,
Linda

Dr. Linda Robyn, Ph.D.
Associate Professor
Department of Criminology and Criminal Justice

Bon Sec 4.27.10
# UNIVERSITY CURRICULUM COMMITTEE
## 2009-2010
### MEETING SIGN IN SHEET
**DATE:** April 27, 2010

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