

University Curriculum Committee Agenda for December 2, 2008

I. Minutes from previous meeting – November 18, 2008

II. Consent Items: Courses

| | | | | Effective Date/ Revised Effective Date | Summary of Changes |
|---|------------------------|------------------|---|---|---------------------------------------|
| A. The W. A. Franke College of Business | | | | | |
| Change Course | | | | | |
| 1. | <u>ACC 256</u> ACC | 256 | 3 | PRINCIPLES OF ACCOUNTING: MANAGERIAL | Fall 2009 Prereqs |
| 2. | <u>HA 351</u> HA | 351 | 3 | Corporate Finance for Hospitality Managers | Summer 2008 Summer 2009 Prereqs |
| 3. | <u>HA 355</u> HA | 355 | 3 | Food and Beverage Cost Control | Summer 2008 Summer 2009 Prereqs |
| 4. | <u>HA 401</u> HA | Fall 2009 401 | 3 | Catalog Descr. Course Title RESORT OPERATIONS AND CLUB MANAGEMENT | |
| B. College of Engineering, Forestry & Natural Sciences | | | | | |
| Change Course | | | | | |
| 1. | <u>BIO 416</u> BIO | 416 | 4 | HUMAN ANATOMY | Fall 2009 Course Title, Prereqs |
| 2. | <u>BIO 482C</u> BIO | 482C | 3 | HUMAN GENOMICS | Spring 2009 Prereqs |

3. FOR 443
FOR

443 3

ECOLOGY AND MANAGEMENT OF
INTRODUCED SPECIES IN FORESTS & RANGELANDS

Spring 2010

Co-convene, Prereqs

I. Consent Items Plans

C. The W. A. Franke College of Business

Delete Certificate

- | | | |
|--|-----------|--------------|
| 1. <u>Systems Administration Certificate</u> | Fall 2009 | Support_Link |
| Certificate in Systems Administration | | 8 Term Plan: |

Change Minor

- | | | | |
|-----------------------------|-----------|----------------|--------------|
| 2. <u>Minor in Business</u> | Fall 2009 | Outcome Change | Support_Link |
| Minor in Business | | | 8 Term Plan |

D. Liberal Studies - Deletions

1. MS 102 - Block: Social & Political Worlds, Effective date: Fall 2009
ANT 390 - Block: Social & Political Worlds, Effective date: Spring 2009
SWS 250 - Block: Social & Political Worlds, Effective date: Spring 2009

III. Action Items

A. College of Arts and Letters

Change Plan

- | | | |
|---|-----------|-------------------------------|
| 1. <u>BS Art Education</u> B.S. (Secondary Education) Art Education | Fall 2009 | Support Link: 8 Term Plan: |
|---|-----------|-------------------------------|

B. Undergraduate Studies

New Plan

- | | | |
|--|-----------|-------------------------------|
| 1. <u>Contract Honors</u> Contract Honors | Fall 2009 | Support Link: 8 Term Plan: |
|--|-----------|-------------------------------|

C. The W. A. Franke College of Business

New Course

- | | |
|--|-----------|
| 1. <u>ECO 328</u> ECO 328 3 The Political Economy of Energy | Fall 2009 |
|--|-----------|

Change Plan

- | | | | |
|---|-----------|------------------------------|--|
| 2. <u>FCB Econ Plan</u> B.S.B.A. in Business Economics | Fall 2009 | Major Reqmts-Course(s) Added | Support Link: <u>FCB Memo to UCC</u> 8 Term Plan: |
| 3. <u>FCB Econ Minor</u> Minor in Economics | Fall 2009 | Outcome Change | Support Link: <u>FCB Memo to UCC</u> 8 Term Plan: |

New Certificate

| | | | | |
|----|---|-----------|--|-------------------------------|
| 4. | <u>Hospitality Marketing and Sales</u> Hospitality Marketing and Sales Certificate for HRM majors | Fall 2009 | | Support Link: 8 Term Plan: |
|----|---|-----------|--|-------------------------------|

Change Certificate

| | | | | |
|----|---|-----------|------------------------|-------------------------------|
| 5. | <u>FCB Certificates</u> The W. A. Franke College of Business Certificates | Fall 2009 | Admission Requirements | Support Link: 8 Term Plan: |
|----|---|-----------|------------------------|-------------------------------|

D. College of Education

New Course

| | | | | |
|----|-----------------------|-----|--|-------------|
| 1. | <u>BME 300</u> BME | 300 | 3 Introduction to Structured English Immersion | Summer 2009 |
|----|-----------------------|-----|--|-------------|

E. College of Social and Behavioral Sciences

New Course

| | | | | |
|----|-----------------------|-----|------------------------------|-----------|
| 1. | <u>DIS 201</u> DIS | 201 | 3 Introduction to Disability | Fall 2009 |
|----|-----------------------|-----|------------------------------|-----------|

| | | | | |
|----|-----------------------|-----|--|-----------|
| 2. | <u>POS 347</u> POS | 347 | 3 Environmental Politics of the Colorado Plateau | Fall 2009 |
|----|-----------------------|-----|--|-----------|

| | | | | |
|----|-----------------------|-----|---------------------------|-----------|
| 3. | <u>PSY 280</u> PSY | 280 | Cross-Cultural Psychology | Fall 2009 |
|----|-----------------------|-----|---------------------------|-----------|

Change Plan

| | | | | |
|----|--|-----------|------------------------------|-------------------------------|
| 4. | <u>SBS Econ Plan</u> B. S. Economics (Extended Major) | Fall 2009 | Major Reqmts-Course(s) Added | Support Link: 8 Term Plan: |
|----|--|-----------|------------------------------|-------------------------------|

F. College of Engineering, Forestry & Natural Sciences

| | | | | | |
|----|--|-----------|--|-------------------------------|---|
| 1. | <u>FOR 410</u> FOR 410 | | 3 Multiple Resources Silviculture | Spring 2011 | Co-convene |
| 2. | <u>BA Environmental Studies</u> BA Environmental Studies | Fall 2009 | Major Reqmts-Course(s) Added | Support Link: 8 Term Plan: | <u>BA ENV Support</u> <u>ENV 8 term</u> |
| | Southwest Environment Focus; | | | | |
| 3. | <u>BSEnvironmental Studies</u> BS Environmental Studies | Fall 2009 | Major Reqmts-Course(s) Added | Support Link: 8 Term Plan: | <u>BS ENV Support</u> <u>BS Env 8 term</u> |
| | Southwest Environment Focus; Landscape, Interpretation, and | | | | |
| 4. | <u>Construction Management Plan</u> Construction Management | Fall 2009 | Major Reqmts-Course(s) Added | Support Link: 8 Term Plan: | <u>CM Plan Support</u> <u>CM 8 term</u> |
| 5. | <u>ENV SCI BIO Plan</u> Environmental Sciences Biology | Fall 2009 | | Fall 2008 8 Term Plan: | Major Reqmts-Course(s) Added Support Link: |
| 6. | <u>Exercise Science Plan</u> Exercise Science | Fall 2009 | | Support Link: 8 Term Plan: | <u>EXS 8 term Plan</u> |
| 7. | <u>TSM 101</u> NEW SUBJ 101 TSM | Fall 2009 | Step 1: Inquiry Approaches to Teaching | | |
| 8. | <u>TSM 102</u> NEW SUBJ 102 TSM | Fall 2009 | Step 2: Inquiry-Based Lesson Design | | |

| | | | | | | |
|-----|--|------|-------------------------------|-----------|--|---|
| 9. | <u>TSM 300</u> NEW SUBJ TSM | 300 | Knowing and Learning | Fall 2009 | | |
| 10. | <u>TSM 350</u> NEW SUBJ TSM | 350 | Classroom Interactions | Fall 2009 | | |
| 11. | <u>TSM 404</u> NEW SUBJ TSM | 404 | Research Methods | Fall 2009 | | |
| 12. | <u>TSM 450</u> NEW SUBJ TSM | 450 | Project-Based Instruction | Fall 2009 | | |
| 13. | <u>TSM 495C</u> NEW SUBJ TSM | 495C | Apprentice Teaching | Fall 2009 | | |
| 14. | <u>TSM 496C</u> NEW SUBJ TSM | 496C | 1 Apprentice Teaching Seminar | Fall 2009 | | |
| 15. | <u>BS Ed Physics Secondary Ed. Extended</u> Sec Ed - Physics (BSED) | | | Fall 2009 | Major Reqmts-Course(s) Added, Major Reqmts-Course(s) Deleted, Major Reqmts-Unit Change, Minor Reqmts-Course(s) Added, Minor Reqmts | Support Link: NAU Teach Support 8 Term Plan: |
| 16. | <u>BSEd Biology</u> Sec Ed - Biology (BSED) | | | Fall 2009 | Major Reqmts-Course(s) Added, Major Reqmts-Course(s) Deleted, Minor Reqmts-Course(s) Added, Minor Reqmts-Course(s) Deleted | Support Link: NAU Teach Support 8 Term Plan: |
| 17. | <u>BSEd Chemistry</u> Sec Ed - Chemistry (BSED) | | | Fall 2009 | Major Reqmts-Course(s) Added, Major Reqmts-Course(s) Deleted, Major Reqmts-Unit Change, Minor Reqmts-Course(s) Added, Minor Reqmts | Support Link: NAU Teach Support 8 Term Plan: |

| | | |
|---|---|---|
| 18. <u>BSEd Earth Science</u> Sec Ed - Earth Science (BSED) | Major Reqmts-Course(s) Added, Major Reqmts-Unit Change | Support Link: NAU Teach Support 8 Term Plan: |
| 19. <u>BS Ed Mathematics Secondary Education</u> NAU Teach Support Sec Ed - Math (BSED) | Reqmts-Course(s) Deleted | Fall 2009 Major Reqmts-Course(s) Added, Major Support Link: 8 Term Plan: |
| 20. <u>BS ED General Science</u> NAU Teach Support Sec Ed - Physical Science (BSED) | Reqmts-Course(s) Deleted, Major Reqmts-Unit Change, Minor Reqmts-Course(s) Added, Minor Reqmts- | Fall 2009 Major Reqmts-Course(s) Added, Major Support Link: 8 Term Plan: |

G. Liberal Studies Approvals

1. TSM 495C: Apprentice Teaching - Effective Date Fall 2009
TSM 496C: Apprentice Teaching Seminar - Effective Date Fall 2009

IV. Discussion

- A. Master Syllabi
- B. Bylaws Policies & Procedures

University Curriculum Committee Minutes for November 18, 2008

I. Minutes from previous meeting – October 21, 2008 – approved as presented.

II. Consent Items – All items approved as presented. Item C. 12 and 13 were removed from the agenda as duplicate submissions.

| | | | Effective Date/ Revised Effective Date | Summary of Changes |
|---------------------------------------|-----------------------|-------|---|--|
| A. College of Arts and Letters | | | | |
| Change Course | | | | |
| 1. | <u>MUS 122</u> | 122 2 | Harmony II | Fall 2009 Prereqs |
| 2. | <u>MUS 221</u> | 221 3 | HARMONY III | Fall 2009 Prereqs |
| 3. | <u>ART 223</u> | 223 | PAINTING FOUNDATION | Summer 2008 Summer 2009 Catalog Descr, Course Title, Prereqs |
| 4. | <u>ART 222</u> ART | 222 | PAINTING FUNDAMENTALS | Summer 2008 Summer 2009 Catalog Descr, Course Title, Prereqs |
| 5. | <u>ART 322</u> ART | 322 | PAINTING CONCEPTS I | Summer 2008 Spring 2009 Course Title, Prereqs |
| 6. | <u>ART 328</u> ART | 328 | ABSTRACT PAINTING IV | Summer 2008 Spring 2009 Course Title, Prereqs |
| 7. | <u>ART 422</u> ART | 422 | PAINTING CONCEPTS II | Summer 2008 Spring 2009 Prereqs |

| | | | | | Effective Date/ Revised Effective Date | Summary of Changes |
|-----|-----------------------|-----|---|---------------------------------|---|-----------------------------|
| 8. | <u>MUP 352</u> MUP | 352 | 1 | BAND WIND SYMPHONY | Fall 2009 | Course Title |
| 9. | <u>MUP 353</u> MUP | 353 | 1 | BAND SYMPHONIC | Fall 2009 | Course Title |
| 10. | <u>MUP 354</u> MUP | 354 | 1 | BAND MARCHING | Fall 2009 | Course Title |
| 11. | <u>MUP 355</u> MUP | 355 | 1 | Band Pep | Fall 2009 | Course Title |
| 12. | <u>MUS 121</u> MUS | 121 | 1 | Harmony I | Fall 2009 | Prereqs |
| 13. | <u>MUS 131</u> MUS | 131 | 2 | SIGHT SINGING AND DICTATION I | Fall 2009 | Catalog Descr, Course Title |
| 14. | <u>MUS 132</u> MUS | 132 | 2 | SIGHT SINGING AND DICTATION II | Fall 2009 | Catalog Descr, Prereqs |
| 15. | <u>MUS 222</u> MUS | 222 | | HARMONY IV | Fall 2009 | Prereqs |
| 16. | <u>MUS 231</u> MUS | 231 | | SIGHT SINGING AND DICTATION III | Fall 2009 | Catalog Descr, Prereqs |
| 17. | <u>MUS 232</u> MUS | 232 | | SIGHT SINGING AND DICTATION IV | Fall 2009 | Catalog Descr, Prereqs |

Effective Date/
Revised Effective Date Summary of Changes

Delete Course

| | | | | | |
|-----|-----------------------|-----|--|------------------------|---------------|
| 18. | <u>ART 200</u> ART | 200 | Visual Aesthetics for Contemporary Culture | Fall 2009 Fall 2008 | Delete Course |
| 19. | <u>ART 231</u> ART | 231 | Painting I | Fall 2009 | Delete Course |
| 20. | <u>ART 331</u> ART | 331 | Painting II | Fall 2009 | Delete Course |
| 21. | <u>ART 432</u> ART | 432 | Painting IV | Fall 2009 | Delete Course |

B. College of Engineering, Forestry, Natural Sciences

Change Course

| | | | | | |
|----|-----------------------|------------------|------------------------------------|--------------------------|----------------|
| 1. | <u>CHM 462</u> CHM | 462 | BIOCHEMISTRY II | Spring 2009 Fall 2009 | Grading Option |
| 2. | <u>CM 124</u> CM | 124 | CONSTRUCTION METHODS II | Fall 2009 | Catalog Descr |
| 3. | <u>CM 222</u> CM | 222 | CONSTRUCTION GRAPHICS | Fall 2009 | Catalog Descr |
| 4. | <u>CM 224</u> CM | 224 | Concrete and Concrete Form Systems | Fall 2009 | Prereqs |
| 5. | <u>CM 326</u> CM | Fall 2009 326 | Prereqs MECHANICAL SYSTEMS | Fall 2009 | |

| | | | | Effective Date/ Revised Effective Date | Summary of Changes |
|----|---------------------|-----|-------------------------------------|---|--------------------|
| 6. | <u>CM 481</u> CM | 481 | Construction Operations | Fall 2009 | Prereqs |
| 7. | <u>CM 489</u> CM | 489 | Construction Project Administration | Fall 2009 | Prereqs |

C. College of Social and Behavioral Sciences

Change Course

| | | | | | |
|----|-----------------------|-------|---|------------------------|--------------------------------------|
| 1. | <u>MER 430</u> MER | 430 | CULTURAL, PSYCHOLOGICAL AND SOCIAL ASPECTS OF DRESS | Fall 2008 Fall 2009 | Number |
| 2. | <u>PHO 181</u> PHO | 181 | COMMUNICATION PHOTOGRAPHY | Fall 2009 | Catalog Descr |
| 3. | <u>PHO 285</u> PHO | 285 | INTERMEDIATE PHOTOGRAPHY(| Fall 2009 | Catalog Descr, Prereqs |
| 4. | <u>PHO 381</u> PHO | 381 | PUBLICATIONS PHOTOGRAPHY | Fall 2009 | Catalog Descr, Prereqs |
| 5. | <u>PHO 382</u> PHO | 382 | REPRODUCTION PROCESSES FOR PUBLICATION | Fall 2009 | Catalog Descr, Prereqs |
| 6. | <u>PHO 383</u> PHO | 383 | Color Photography | Fall 2009 | Catalog Descr, Course Title, Prereqs |
| 7. | <u>PHO 384</u> PHO | 384 3 | Studio Photography | Fall 2009 | Catalog Descr, Prereqs |

| | | | | Effective Date/ Revised Effective Date | Summary of Changes |
|----------------------|------------------------|------|---|--|---|
| 8. | <u>PHO 481</u> PHO | 481 | 3 | PHOTOJOURNALISM | Fall 2009 Catalog Descr, Course Title, Prereqs |
| 9. | <u>PHO 483</u> PHO | 483 | 3 | LOCATION PHOTOGRAPHY | Fall 2009 Catalog Descr, Prereqs |
| 10. | <u>PHO 484</u> PHO | 484 | 3 | CORPORATE AND INDUSTRIAL PHOTOGRAPHY | Fall 2009 Catalog Descr, Prereqs |
| 11. | <u>PHO 488C</u> PHO | 488C | 3 | PORTFOLIO DEVELOPMENT SEMINAR | Fall 2009 Catalog Descr, Prereqs |
| 12. | <u>PRM 331</u> PRM | 331 | 3 | OUTDOOR LEADERSHIP CERTIFICATION I | Spring 2009 Catalog Descr |
| 13. | <u>PRM 431</u> PRM | 431 | 3 | OUTDOOR LEADERSHIP CERTIFICATION II | Spring 2009 Catalog Descr |
| Delete Course | | | | | |
| 14. | <u>GGR300</u> GGR | 300 | | Ecotourism | Spring 2009 Delete Course |
| 15. | <u>PHO 370</u> PHO | 370 | | GRAPHIC COMMUNICATION I | Fall 2008 Delete Course |
| 16. | <u>PRM 376</u> PRM | 376 | | Regional Geography of Tourism and Recreation | Spring 2009 Delete Course |

Effective Date/
Revised Effective Date Summary of Changes

17. PRM 378 Spring 2009 Delete Course
PRM 378

Liberal Studies Deletion

18. Liberal Studies TBD Remove Liberal Studies Designation
ANT 270

D. Health and Human Services

Change Course

1. PES 100 Fall 2009 Catalog Descr
PES 100 1

II. Consent Items: Plans

E. College of Social and Behavioral Sciences

Change Plan

1. Journalism Plan Fall 2009 Minor Reqmts-Course(s) Added, Minor
Reqmts-Course(s) Deleted Support_Link 8 term plan
8 Term Plan: Journalism 8 term plan

News-editorial and Environmental
Communication emphases

2. BSW Fall 2009 Admission Requirements, Major
Reqmts-Course(s) Added
Bachelor of Social Work & Minor

3. BS Merchandising Fall 2009 Major Reqmts-Course(s) Added
BS in Merchandising

| Effective Date/ Revised Effective Date | Summary of Changes |
|---|--------------------|
|---|--------------------|

- | | | |
|--|-----------|--|
| 4. <u>News Editorial Minor</u> News Editorial Minor | Fall 2009 | Minor Reqmts-Course(s) Added, Minor Reqmts-Course(s) Deleted |
|--|-----------|--|

Change Subplan

- | | | |
|--|--|--|
| 5. <u>Environmental Communication Minor</u> Environmental Communication Minor | | Minor Reqmts-Course(s) Added, Minor Reqmts-Course(s) Deleted |
|--|--|--|

III. Action Items

A. College of Education – item approved as presented.

Change Plan

- | | | |
|--|-----------|------------------------------|
| 1. <u>Early Childhood Certificate</u> Early Childhood Certificate | Fall 2009 | Major Reqmts-Course(s) Added |
|--|-----------|------------------------------|

B. College of Arts and Letters– item 1 approved as presented, item 2 tabled due to no representation.

Change Course

- | | | |
|---|-----------|-----------------|
| 1. <u>ENG 251</u> ENG 251 ANCIENT LITERATURE | Fall 2009 | Number, Prereqs |
|---|-----------|-----------------|

Change Plan

- | | | |
|--|-----------|--|
| 2. <u>BS Art Education</u> B.S. (Secondary Education) Art Education | Fall 2009 | |
|--|-----------|--|

C. College of Engineering, Forestry, and Natural Sciences— all items approved as presented.

New Course

| | | | |
|-------------------------|-----|---|-----------|
| 1. <u>GCS352</u> GCS | 352 | Grand Canyon Aesthetics: Studies in Painting, Photography, Architecture, and Literature | Fall 2009 |
|-------------------------|-----|---|-----------|

| | | | |
|-------------------------|-----|---|-----------|
| 2. <u>MAT185</u> MAT | 185 | Functions, Applications, and Explorations | Fall 2009 |
|-------------------------|-----|---|-----------|

Change Course

| | | | | |
|-------------------------|-----|-----------------------------|-----------|--|
| 3. <u>PRM398</u> PRM | 398 | MODULAR LEARNING EXPERIENCE | Fall 2009 | Catalog Descr, Course Title, Course Prefix/number to GCS 350 |
|-------------------------|-----|-----------------------------|-----------|--|

D. College of Social and Behavioral Sciences -all items approved as presented.

New Course

| | | | |
|-------------------------|-----|--|-----------|
| 1. <u>PHO282</u> PHO | 282 | Introduction to Digital Photography Workflow | Fall 2009 |
|-------------------------|-----|--|-----------|

| | | | |
|-------------------------|-----|-----------------------|-----------|
| 2. <u>PHO284</u> PHO | 284 | Basic Photojournalism | Fall 2009 |
|-------------------------|-----|-----------------------|-----------|

| | | | |
|-------------------------|-----|-----------------------|-------------|
| 3. <u>PRM350</u> PRM | 350 | 3 Cultural Recreation | Spring 2009 |
|-------------------------|-----|-----------------------|-------------|

| | Effective Date/ Revised Effective Date | Summary of Changes |
|---|---|--------------------|
| 4. <u>PRM 411</u> PRM 411 3 Leave-No-Trace Master Educator Certification | Fall 2009 | |

Change Plan

| | | |
|--|-----------|--|
| 5. <u>BS Photo Journalism</u> B.S. in Journalism Photojournalism | Fall 2009 | |
|--|-----------|--|

| | | |
|--|-----------|------------------------------|
| 6. <u>BS Photography</u> BS Photography | Fall 2009 | Major Reqmts-Course(s) Added |
|--|-----------|------------------------------|

Change Subplan

| | | |
|---|-----------|------------------------------|
| 7. <u>Minor Photography</u> Photography Minor Minor | Fall 2009 | Major Reqmts-Course(s) Added |
|---|-----------|------------------------------|

IV. Discussion

- A. Master Syllabi – will bring for discussion at the next meeting.
- B. Bylaws Policies & Procedures – Ron Pitt and John Hagood have reviewed individually and will meet to discuss for the next UCC meeting.

V. Information

A. Liberal Studies Realignment Action – Blase Scarnati discussed the topic. The Liberal Studies committee is taking a census of the current data in Liberal Studies. The committee is working to re-align current courses and get new syllabi for each course. Then the committee will take up the original Faculty Senate charge and spend time on what the program itself is about. The committee is very sensitive about the time for re-alignment. The committee has all items that have been submitted to date and they will pick up these items when the discussion again open for new courses. Writing and Capstone courses will continue to be approved as submitted.

University Curriculum Committee Proposal for Course Change

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

2. Course change effective beginning of what term and year?
(ex. Spring 2008, Summer 2008) *See effective dates calendar.* Fall 2009

3. College The W. A. Franke College of Business 4. Academic Unit/Department Accounting

5. Current course subject/catalog number ACC 256

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

ACC 256 PRINCIPLES OF ACCOUNTING: MANAGERIAL (3)
Introduces the development and analysis of accounting information for managerial planning and control.

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

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.
This course is required for all BSBA majors..

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? _____

IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING

| CURRENT | PROPOSED |
|--|---|
| Current course subject/catalog number | Proposed course subject/catalog number |
| Current number of units/credits | Proposed number of units/credits |
| Current Course Fee yes <input type="checkbox"/> no <input type="checkbox"/> | If subject or catalog number change Move <input type="checkbox"/> or Delete <input type="checkbox"/> |
| Current Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> | Proposed Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> |
| Current Repeat for additional Units | Proposed Repeat for additional Units |
| Current Max number of units | Proposed Max number of units |
| Current Prerequisite ACC 255 | Proposed Prerequisite ACC 255 and CIS 120 |
| Current Co-requisite | Proposed Co-requisite |
| Current Co-Convene with | Proposed Co-Convene with |
| Current Cross List with | Proposed 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.

As Excel spreadsheets are assigned in this course CIS 120 is a necessary prerequisite.

10. Approvals

Department Chair/ Unit Head (if appropriate)/ Date

Lawrence C. Mohrman 11-5-08

Chair of college curriculum committee/Date

[Signature] 11/12/08

Dean of college/Date

For Committee use only

[Signature] 11/2/08

For University Curriculum Committee/Date

Action taken:



approved as submitted

approved as modified

University Curriculum Committee Proposal for Course Change

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

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

Fall
~~2008~~ 2009

3. College W.A. Franke College of Business

4. Academic Unit/Department School of Hotel and Restaurant Management

5. Current course subject/catalog number HA351

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

[/www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm](http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm)).

Corporate Finance for Hospitality Managers
Examines financial management's role within the hospitality industry and how it maximizes the value of hospitality corporations 3 units

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

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? _____

IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING

| CURRENT | PROPOSED |
|---|---|
| Current course subject/catalog number | Proposed course subject/catalog number |
| Current number of units/credits | Proposed number of units/credits |
| Current Course Fee yes <input type="checkbox"/> no <input type="checkbox"/> | If subject or catalog number change Move <input type="checkbox"/> or Delete <input type="checkbox"/> |
| Current Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> | Proposed Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> |
| Current Repeat for additional Units | Proposed Repeat for additional Units |
| Current Max number of units | Proposed Max number of units |
| Current Prerequisite Prerequisite: (HA 170 or CIS 120) and ACC 255 and HA 260 and Admission to Hotel and Restaurant Mgmt(BS) or Int'l Hospitality Mgt (BS) or Restaurant Management (CERT) or Int'l Tourism Mgt (CERT) or International Exchange Student Group | Proposed Prerequisite: Prerequisite: ((Admission to Hotel & Restaurant Mgt (BS) or Intl Hospitality Mgt (BS) or Restaurant Management (CERT) or Intl Tourism Mgt (CERT)) and ACC 255 and (ECO 284 or ECO 284H) and ECO 285 and HA 260 or ACC256) or International Exchange Student Group |
| Current Co-requisite | Proposed Co-requisite |
| Current Co-Convvene with | Proposed Co-Convvene with |
| Current Cross List with | Proposed 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.

More and More HRM students are choosing to do the Business minor and that requires taking ACC 256 instead of HA260. Adding ACC 256 will allow the students to enroll themselves without an override.

10. Approvals *R. Cellini* CHAIR HRM CURRICULUM

Richard M. [Signature]
Department Chair/ Unit Head (if appropriate)/ Date

Lawrence C. Mohrman 10/22/08
Chair of college curriculum committee/Date

[Signature] 11/10/08
Dean of college/Date

For Committee use only

11/2/08 Bob Bell

For University Curriculum Committee/Date

Action taken: approved as submitted approved as modified

Only utilize form if proposing course for LIBERAL STUDIES designation.

LIBERAL STUDIES ONLY

Contact name: _____

Contact email: _____

Dept. Chair name: _____

Dept. Chair email: _____

College Contact name : _____

College Contact email: _____

- 1. This course is a Single section Multi-section
- 2. List names of faculty who may teach this course: _____
- 3. Section enrollment cap: _____

If this course is being submitted for approval as a new LIBERAL STUDIES course, please complete questions 4-6.
OR

If this course is being submitted for approval as a new JUNIOR LEVEL WRITING course, please complete questions 10-11.
OR

If this course is being submitted for approval as a new SENIOR CAPSTONE course, please complete questions 12 - 14.

NEW LIBERAL STUDIES COURSE

4. Distribution Block (check one): *If a topics course, must apply to ALL sections.*

Aesthetic and Humanistic Inquiry Cultural Understanding Science Social and Political Worlds

5. Skills (check two): *If a topics course, must apply to ALL sections.*

Effective Oral Communication Effective Writing Critical Thinking
Quantitative Reasoning Scientific Inquiry

6. Is this a topics course? Yes No
If YES, please complete questions 34-36. If NO, please go to question 42.

TOPICS COURSE ONLY

7. Identify the Student Learning Outcomes that will be found in ALL topic syllabi offered under this course number.

8. Explain by what method(s) Student Learning Outcomes will be assessed in ALL topic syllabi offered under this course number.

9. Please attach an example of a Topic Syllabus offered under this course number.

NEW JUNIOR LEVEL WRITING COURSE (refer to question 19)

10. To which degree programs offered by your department/academic unit does this proposal apply? _____

11. Do you intend to offer ABC 300 and ABC 300W? yes no
If no, please submit a course delete form for the ABC 300.

NEW SENIOR CAPSTONE COURSE (refer to question 19)

12. To which degree programs offered by your department/academic unit does this proposal apply? _____

13. Does this proposal replace or modify an existing course or experience? yes no
If yes, which course(s)? _____

14. Do you intend to offer ABC 400 and ABC 400C? yes no
If no, please submit a course delete form for the ABC 400.

University Curriculum Committee Proposal for Course Change

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

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

~~2008~~ ^{Fall} 2009

3. College W.A. Franke College of Business

4. Academic Unit/Department School of Hotel and Restaurant Management

5. Current course subject/catalog number HA355

6. Current catalog title, course description and units. (Cut and paste from current on-line academic catalog
[/www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm](http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm)).
Food and Beverage Cost Control
Management of systems and techniques used to control food, beverage, and labor costs in the hospitality industry. Letter grade only. 3 units.

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

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? _____

IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING

| CURRENT | PROPOSED |
|---|---|
| Current course subject/catalog number | Proposed course subject/catalog number |
| Current number of units/credits | Proposed number of units/credits |
| Current Course Fee yes <input type="checkbox"/> no <input type="checkbox"/> | If subject or catalog number change Move <input type="checkbox"/> or Delete <input type="checkbox"/> |
| Current Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> | Proposed Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> |
| Current Repeat for additional Units | Proposed Repeat for additional Units |
| Current Max number of units | Proposed Max number of units |
| Current Prerequisite Prerequisite: (HA 170 or CIS 120) and ACC 255 and HA 260 and Admission to Hotel and Restaurant Mgmt(BS) or Int'l Hospitality Mgt (BS) or Restaurant Management (CERT) or Int'l Tourism Mgt (CERT) or International Exchange Student Group | Proposed Prerequisite Prerequisite: (HA170 or CIS120) and ACC255 and (HA 260 or ACC 256) and Admission to Hotel and Restaurant Mgmt(BS) or Int'l Hospitality Mgmt or BS) or Restaurant Management (CERT) or Int'l Tourism Mgt (CERT) or International Exchange Student Group |
| Current Co-requisite | Proposed Co-requisite |
| Current Co-Convene with | Proposed Co-Convene with |
| Current Cross List with | Proposed 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.

More and More HRM students are choosing to do the Business minor and that requires taking ACC 256 instead of HA260. Adding ACC 256 will allow the students to enroll themselves without an override.

10. Approvals *R. Callin* CHAIR HRM COURSES

Richard M. Callin
Department Chair/ Unit Head (if appropriate)/ Date

Lawrence C. Mohreri *10/22/08*
Chair of college curriculum committee/Date

W. York *11/12/08*
Dean of college/Date

For Committee use only

12/2/09

For University Curriculum Committee/Date

Action taken:



approved as submitted

approved as modified

Only utilize form if proposing course for LIBERAL STUDIES designation.

LIBERAL STUDIES ONLY

Contact name: _____

Contact email: _____

Dept. Chair name: _____

Dept. Chair email: _____

College Contact name : _____

College Contact email: _____

- 1. This course is a Single section Multi-section
- 2. List names of faculty who may teach this course: _____
- 3. Section enrollment cap: _____

If this course is being submitted for approval as a new LIBERAL STUDIES course, please complete questions 4-6.

OR

If this course is being submitted for approval as a new JUNIOR LEVEL WRITING course, please complete questions 10-11.

OR

If this course is being submitted for approval as a new SENIOR CAPSTONE course, please complete questions 12 - 14.

NEW LIBERAL STUDIES COURSE

4. Distribution Block (check one): *If a topics course, must apply to ALL sections.*

- Aesthetic and Humanistic Inquiry
- Cultural Understanding
- Science
- Social and Political Worlds

5. Skills (check two): *If a topics course, must apply to ALL sections.*

- Effective Oral Communication
- Effective Writing
- Critical Thinking
- Quantitative Reasoning
- Scientific Inquiry

6. Is this a topics course? Yes No
If YES, please complete questions 34-36. If NO, please go to question 42.

TOPICS COURSE ONLY

7. Identify the Student Learning Outcomes that will be found in ALL topic syllabi offered under this course number.

8. Explain by what method(s) Student Learning Outcomes will be assessed in ALL topic syllabi offered under this course number.

9. Please attach an example of a Topic Syllabus offered under this course number.

NEW JUNIOR LEVEL WRITING COURSE (refer to question 19)

10. To which degree programs offered by your department/academic unit does this proposal apply? _____

11. Do you intend to offer ABC 300 and ABC 300W? yes no
If no, please submit a course delete form for the ABC 300.

NEW SENIOR CAPSTONE COURSE (refer to question 19)

12. To which degree programs offered by your department/academic unit does this proposal apply? _____

13. Does this proposal replace or modify an existing course or experience? yes no
If yes, which course(s)? _____

14. Do you intend to offer ABC 400 and ABC 400C? yes no
If no, please submit a course delete form for the ABC 400.

University Curriculum Committee

Proposal for Course Change

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

2. Course change effective beginning of what term and year?
(ex. Spring 2008, Summer 2008) *See effective dates calendar.* Fall 2009

3. College The W.A. Franke College of Business 4. Academic Unit/Department School of Hotel and Restaurant Management

5. Current course subject/catalog number HA401

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

HA 401 RESORT OPERATIONS AND CLUB MANAGEMENT

Material covers the history and development of resort destinations and resort and club management including the daily aspects of managing golf, spa, timeshare, and recreational operations.

Prerequisite: Admission to Hotel & Restaurant Mgt (BS) or Intl Hospitality Mgt (BS) or Restaurant Management (CERT) or Intl Tourism Mgt (CERT) or International Exchange Student Group
3 Units

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

HA401 Resort Operations

Material covers the history and development of resort destinations **and the daily aspects of managing more diverse food, beverage, and catering operations, as well as** golf, spa, timeshare, and resort operations

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? _____

IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING

| CURRENT | PROPOSED |
|--|---|
| Current course subject/catalog number HA401 Resort Operations and Club Management | Proposed course subject/catalog number HA401 Resort Operations |
| Current number of units/credits | Proposed number of units/credits |
| Current Course Fee yes <input type="checkbox"/> no <input type="checkbox"/> | If subject or catalog number change Move <input type="checkbox"/> or Delete <input type="checkbox"/> |
| Current Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> | Proposed Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> |
| Current Repeat for additional Units | Proposed Repeat for additional Units |
| Current Max number of units | Proposed Max number of units |
| Current Prerequisite | Proposed Prerequisite |
| Current Co-requisite | Proposed Co-requisite |
| Current Co-Convene with | Proposed Co-Convene with |
| Current Cross List with | Proposed 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 <input type="checkbox"/> Diversity <input type="checkbox"/> | |

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

Topics within resort management are expanding and club operations requires an individual course to cover the material effectively. We attempted to combine them into one class and found that not enough time to cover the range of relevant material

10. Approvals *MCA*

Richard M. ... HRM curriculum
Department Chair/ Unit Head (if appropriate)/ Date

Lawrence C. ... 10/22/08
Chair of college curriculum committee/Date

... 11/12/08
Dean of college/Date

For Committee use only
Ben ... 12/2/08
For University Curriculum Committee/Date

Action
taken:

approved as submitted

approved as modified

University Curriculum Committee
Proposal for Course Change

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

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

Spring 2009

3. College CFENS

4. Academic Unit/Department BIOLOGY

5. Current course subject/catalog number

BIO 416

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

[/www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm](http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm)).

BIO 416 HUMAN ANATOMY (4)

Investigation of human anatomy through hands-on study of human cadavers, models, and prosections. The course will cover skeletal, muscular, nervous, cardiopulmonary, digestive, and urogenital anatomy. Letter grade only. Prerequisite: BIO 201 and BIO 202

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

BIO 416 GROSS HUMAN ANATOMY (4)

Investigation of human anatomy through hands-on study of human cadavers, models, and prosections. The course will cover skeletal, muscular, nervous, cardiopulmonary, digestive, and urogenital anatomy. Letter grade only. Prerequisite: **Grade of A or B in both BIO 201 and BIO 202.**

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?

IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING

| CURRENT | PROPOSED |
|--|---|
| Current course subject/catalog number BIO 416 HUMAN ANATOMY | Proposed course subject/catalog number BIO 416 GROSS HUMAN ANATOMY |
| Current number of units/credits | Proposed number of units/credits |
| Current Course Fee yes X <input type="checkbox"/> no <input type="checkbox"/> | If subject or catalog number change Move <input type="checkbox"/> or Delete <input type="checkbox"/> |
| Current Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> | Proposed Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> |
| Current Repeat for additional Units | Proposed Repeat for additional Units |
| Current Max number of units | Proposed Max number of units |
| Current Prerequisite BIO 201 AND BIO 202 | Proposed Prerequisite Grade of A or B in both BIO 201 and BIO 202. |
| Current Co-requisite | Proposed Co-requisite |
| Current Co-Convene with | Proposed Co-Convene with |
| Current Cross List with | Proposed 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

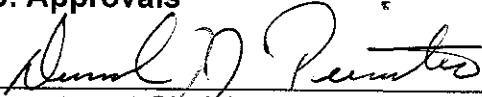
9. Justification for course change. Please indicate how past assessments of student learning prompted proposed changes.

Name change: "Gross Human Anatomy" describes this new course more accurately than does Human Anatomy.

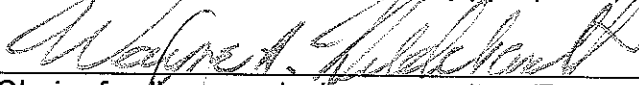
Prerequisite change: To succeed in BIO 416, students must have a solid foundation in basic anatomy, and anatomical concepts.

This course is an elective, and therefore the lack of this class could not delay or prevent any student's graduation.

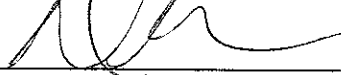
10. Approvals

 11/26/08 FOR MAJLIBST/ARTS

Department Chair/ Unit Head (if appropriate)/ Date

 12/1/08

Chair of college curriculum committee/Date

 12/1/08

Dean of college/Date

For Committee use only

For University Curriculum Committee/Date

12/2/09 Bob Bitt

Action
taken:



approved as submitted

approved as modified

University Curriculum Committee Proposal for Course Change

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

2. Course change effective beginning of what term and year?
(ex. Spring 2008, Summer 2008) *See effective dates calendar.* Spring 2009

3. College CEFNS 4. Academic Unit/Department BIO

5. Current course subject/catalog number BIO 482C

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

BIO 482C HUMAN GENOMICS (3)
This course will convey basic ideas in human genomics, including how genetic information determines phenotype, theories of genetic diagnosis, and the role of genes in cancer and other diseases. Letter grade only. Prerequisite: BIO 344 CAP

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

BIO 482C HUMAN GENOMICS (3)
This course will convey basic ideas in human genomics, including how genetic information determines phenotype, theories of genetic diagnosis, and the role of genes in cancer and other diseases. Letter grade only. Prerequisite: **BIO 344 and either BIO 340 or BIO 350**

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? _____

IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING

| CURRENT | PROPOSED |
|--|---|
| Current course subject/catalog number | Proposed course subject/catalog number |
| Current number of units/credits | Proposed number of units/credits |
| Current Course Fee yes <input type="checkbox"/> no <input type="checkbox"/> | If subject or catalog number change Move <input type="checkbox"/> or Delete <input type="checkbox"/> |
| Current Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> | Proposed Grading Option* Letter Grade <input type="checkbox"/> Pass/Fail <input type="checkbox"/> or Both <input type="checkbox"/> |
| Current Repeat for additional Units | Proposed Repeat for additional Units |
| Current Max number of units | Proposed Max number of units |
| Current Prerequisite BIO 344 | Proposed Prerequisite BIO 344 AND either BIO 340 or BIO 350 |
| Current Co-requisite | Proposed Co-requisite |
| Current Co-Convene with | Proposed Co-Convene with |
| Current Cross List with | Proposed 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.

This is a new course that will require a background in basic genetics (i.e., either BIO340 or 350).

10. Approvals

M. Watwood 11-6-08
 Department Chair/ Unit Head (if appropriate)/ Date

James A. Hildebrandt 11-12-08
 Chair of college curriculum committee/Date

[Signature] 11/12/08
 Dean of college/Date

For Committee use only

12/2/00 B.G.

For University Curriculum Committee/Date

Action
taken:

✓

approved as submitted

HHH

approved as modified

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

1. College The W. A. Franke College of Business 2. Academic Unit/Department CIS

3. Academic Plan Name Certificate in Systems Administration 4. Subplan (if applicable)? _____

5. Effective Date FALL 2009

6. Is this proposal for a : New Plan Plan Change* Plan Deletion

New Subplan Subplan Change Subplan Deletion

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

| | |
|---|---|
| <p>7. For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the <i>current</i> on line academic catalog: http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm <i>Be sure you include all catalog text that pertains to this plan change</i></p> <p>For New Plans, leave this column blank.</p> <p>[There is nothing in the catalog at this time for this certificate, but we believe that was related to the misunderstandings earlier this term – the certificate was deleted, then appeared in the catalog and then was deleted by our request from the catalog. We want to make sure that all documentation is correct showing that this certificate has been deleted.]</p> | <p>Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing and strikethrough what is being deleted. <i>(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.)</i></p> |
|---|---|

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.*

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.
 - 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

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

This certificate was replaced with a Certificate in Systems Administration and Security

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

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.

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

Certifications

| | |
|--|----------|
| Department Chair/ Unit Head (if appropriate) | Date |
| <i>Laurence C. Mohrman</i> | 11/5/08 |
| Chair of college curriculum committee | Date |
| <i>G. M. [Signature]</i> | 11/12/08 |
| Dean of college | Date |

For committee use only



12/2/09

For University Curriculum Committee

Date

Action taken:



approved as submitted

approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

| | | | |
|-----------------------------|---|---|--|
| 1. College | The W. A. Franke College of Business | 2. Academic Unit/Department | |
| 3. Academic Plan Name | Minor in Business | 4. Subplan (if applicable)? | |
| 5. Effective Date | FALL 2009 | | |
| 6. Is this proposal for a : | <input type="checkbox"/> New Plan | <input type="checkbox"/> XPlan Change* | <input type="checkbox"/> Plan Deletion |
| | <input type="checkbox"/> New Subplan | <input type="checkbox"/> Subplan Change | <input type="checkbox"/> Subplan Deletion |

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

| | |
|--|---|
| <p>7. For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the <i>current</i> on line academic catalog: http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm <i>Be sure you include all catalog text that pertains to this plan change</i></p> <p>For New Plans, leave this column blank.</p> <p>Minor in Business</p> <p>To complete this minor, you take the following units with a cumulative grade point average of at least 2.0:</p> <ul style="list-style-type: none"> • ACC 205, 255 and 256; ECO 284 and 285; FIN 303; MGT 303; and MKT 303 (24 units) <p>You must complete at least 9 units of minor courses at NAU, and you must complete the lower-division business courses before you can enroll in upper-division business courses.</p> <p>You may not minor in a business discipline if your major is in business.</p> <p>Be aware that some courses required for your minor may have prerequisites that you must also take. Check NAU's Course Catalog to find out.</p> | <p>Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing and strikethrough what is being deleted. <i>(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.)</i></p> <p>Minor in Business</p> <p>To complete this minor, you take the following units with a cumulative grade point average of at least 2.0:</p> <ul style="list-style-type: none"> • ACC 205, 255 and 256; ECO 284 and 285; FIN 303; MGT 303; and MKT 303 (24 units) <p>You must complete at least 9 units of minor courses at NAU, and you must complete the lower-division business courses before you can enroll in upper-division business courses.</p> <p>You must have completed all the coursework used to fill business major and core minor requirements within the last 10 years</p> <p>You may not minor in a business discipline if your major is in business.</p> <p>Be aware that some courses required for your minor may have prerequisites that you must also take. Check NAU's Course Catalog to find out.</p> |
|--|---|

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.
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.
 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

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

This statement will bring our minors in line with our bachelors degree.

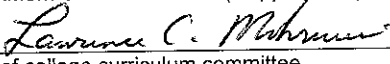

12. If this academic plan/subplan will require additional faculty, space, or equipment, how will these requirements be satisfied?

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.

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

Certifications

| | |
|---|----------|
| Department Chair/ Unit Head (if appropriate) | Date |
|  | 11-5-08 |
| Chair of college curriculum committee | Date |
|  | 11/12/08 |
| Dean of college | Date |

For committee use only

[Handwritten Signature]

2/2/08

For University Curriculum Committee

Date

Action taken: _____ approved as submitted

approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

Hi Nicole,
We have rounded up the effective date for the following LS designation DELETIONS.

MS 102
Block: Social & Political Worlds
Effective date: Fall 2009

ANT 390
Block: Social & Political Worlds
Effective date: Spring 2009

SWS 250
Block: Social & Political Worlds
Effective date: Spring 2009

Thanks!

Blase

Blase S. Scarnati, Ph.D.
Director, First Year Seminar Program

The following two Senior Capstone courses were reviewed by the LSC and are approved.

TSM 495C: Apprentice Teaching

TSM 496C: Apprentice Teaching Seminar

Thanks!

Blase

Blase S. Scarnati, Ph.D.
Director, First Year Seminar Program

To: Academic Chairs and Directors
University Curriculum Committee

From: Karen Pugliesi

Date: October 27, 2008

Re: Honors Contract Option

I am very pleased to introduce you to a new model through which Northern Arizona University Honors Program students will have greater opportunities for challenging learning experiences. The proposed honors contract option will enable students to pursue study under the supervision of faculty from across the university. The contract option will address the desire of Honors students for a wider variety of course options. In a time of resources constraints, it is difficult to meet the diverse needs of Honors students with regular course sections.

The contract option is based on individualized contracts for an honors plan of study in conjunction with a regularly scheduled course. A plan is developed by the faculty and students in response to a student's request. The contract approach will allow us to increase learning opportunities without as much an impact on programs in our degree granting academic units. This approach has been used with great success by other successful honors programs, including the Barrett Honors College at ASU.

Anne Scott, Interim Director of the University Honors Program, has developed the attached plan for contract based honors learning in consultation with the Honors Program Advisory Council, which has given its blessing to the proposal. I hope you will support the implementation of the contract honors option at Northern Arizona University.

To: Ron Pitt
From: Anne Scott
Date: 27 September 08
Re: Contract Honors Proposal

1. What is this proposal?

The Honors Program seeks to create a Contract Honors option whereby an Honors student would be allowed to write and fulfill a “contract” with a specific instructor to complete the work for, and thus receive credit for, an Honors course.

2. What is the background of current Honors course offerings?

The Honors Program currently offers four types of courses for its students. (1) We offer a small number of HON courses by means of full-time or part-time instructors hired by the Vice Provost’s office or the Honors Program. (2) In addition to these courses, other departments on campus offer a few “dedicated” courses for our Program, i.e., courses with a dept. prefix and an “-H” suffix with only Honors students enrolled in them. (3) The Honors Program, every year, offers a number of cross-listed or co-convened courses, i.e., regular courses in which a certain number of seats have been set aside for Honors students and for which, like dedicated Honors courses, the instructor has agreed to offer an enhanced intellectual experience for those Honors students. These courses, as well, carry a dept. prefix and an “-H” suffix. (4) Finally, we provide students with opportunities for independently-arranged coursework (i.e., fieldwork, independent study, independent research, thesis, and internship) and opportunities to receive Honors credit for courses taken through international education opportunities. These independently-arranged courses carry the HON prefix.

Some Honors programs and colleges across the nation have a similar mix of courses. However, many Honors programs, including ASU’s program and programs in Idaho and Montana similar in size to our own, allow students to fulfill Honors credits by yet another means, i.e., a Contract Honors option. In fact, the majority of ASU’s Honors students seem to fulfill their credits by means of this particular option, especially those students in more rigorous majors.

3. What is the rationale for adding the Contract Honors option to our program offerings?

Students in NAU’s Honors Program have repeatedly asked for Honors coursework that can apply to their major requirements and at the upper-division levels. They have repeatedly requested in surveys and conversations that the Program offer more such courses and that the course schedule every semester accommodate these needs on a regular basis. In addition, the Program loses students every year because these students cannot find more specialized Honors coursework.

Therefore, the Honors Program wants to give our students the option of creating and fulfilling a contract with an instructor, not as an independently arranged experience but rather as an Honors experience for a course that the instructor is already teaching in a given semester. By fulfilling certain requirements agreed upon by the Honors Program, student, and faculty member, the student taking the course would receive Honors credit for this course.

Please note that the Honors Program intends to use the Contract Honors option as only one of several ways by which students can receive credit for an Honors experience in a class. We will still work to create and promote small seminar-style Honors courses, whether dedicated or cross-listed, for our Honors students to take each semester.

4. What would the parameters be for the Contract Honors option?

- a) An Honors student would be able to use the Contract Honors option to fulfill no more than 6 units of Honors credit;
- b) The Contract Honors option would be used primarily for upper division courses, most likely in a student's major or minor;
- c) The Honors student should decide which faculty member to contact, should meet with this instructor, and should help decide with the faculty member's assistance the exact nature of this Honors experience in the faculty member's particular class. After meeting with the faculty member, both student and faculty member should agree about what kind of added materials, experiences, and the like would be best to implement in the desired course so that the student would be getting appropriate credit for an Honors experience in this course;
- d) After meeting with the instructor, the Honors student would be required to fill out the appropriate paperwork before the start of the term requested for the "Contract Honors" option, and no later than 1 week before the University's deadline to add courses;
- e) The student, the faculty member, and the faculty member's department chair would all be required to sign the contract, which would then go to the Honors director for final approval.
- f) We would allow no more than 25 or 30 students to select this option in any given semester, so that the on-line course schedule for "-H" courses could grow at an acceptable pace, so that we could monitor the success of this new addition to the Program, and so that instructors across campus will not be overwhelmed with too many requests from our students.

5. What paperwork would be required?

The paperwork will consist of a form similar to our independent study/research/fieldwork forms, with blanks to be filled in on one side and guidelines on the back of the form to help student and instructor decide upon the Honors experience that the course will implement. The form will have blanks to be filled in by both student and instructor regarding contact information, course information, credit units, time line for completion of work, and signature lines for student, faculty member, dept chair, and Honors director.

In addition, the student will need to supply a narrative that explains in detail what the Honors component of the class will consist of. There will also be a statement on the form that reads: "Student agrees to fulfill all of the course requirements, including the requirements that enhance the course as an Honors experience."

6. What guidelines can we provide for faculty teaching a Contract Honors course?

See the last few sheets of this document for guidelines that will help faculty members decide upon an Honors experience for their Contract Honors courses. These guidelines will appear on the reverse side of requisite form that the student, instructor, and dept chair will sign.

7. How will the Contract Honors courses be implemented within PeopleSoft/LOUIE?

We have communicated with Ron Pitt and the Academic Information Office regarding the way in which the "H" will be attached to these courses, so that the system can recognize the courses as Honors courses and the class can fulfill degree requirements. Currently, our cross-listed courses are built with the help of the Academic Information Office, which needs several days to enter the course appropriately into the on-line course schedule. Once a course is built in this fashion, it remains this way in the on-line course schedule and needn't be built again. There are currently 2 to 3 dozen courses in the on-line course schedule that already have "H" designations. It is possible that an "H" course that already exists will be desired by an Honors student for a Contract Honors experience. In this case, there will not need to be any extra effort made to ensure that this course is in the schedule.

As mentioned before, we will require that students complete their Honors Contract paperwork 1 week prior to the University's deadline to add courses, so that we can give the Academic Information Office the time needed to enter the course appropriately in the PeopleSoft catalog.

8. What implications are there for faculty who teach a Contract Honors course?

Faculty will have a chance to work with bright, independently-motivated students and to enhance their teaching strategies and/or research as a result of this interaction. In addition, a faculty member who is approached by a student wanting a Contract Honors course has the right to refuse the request; therefore, there shouldn't be any added burden to the faculty member's semester load that wouldn't be already agreed upon by that faculty member (and the same already holds true for faculty members who teach co-convened courses or dedicated courses). Finally, faculty who would teach a Contract Honors course, just as faculty who teach co-convened courses or dedicated courses, would want to list this task in their narratives for annual review, tenure, and promotion

since the experiences do suggest that the faculty members are engaged, above and beyond the call of duty, in their teaching roles and have extended themselves beyond their usual teaching to create this valuable Honors experience for these students. Please note that there will not be any financial compensation for instructors offering a Contract Honors course to a particular student; nor has there been, nor is there, such financial compensation for faculty teaching a co-convened course or a dedicated course, except in very rare situations, where the Program might be able to contribute a small sum as back/fill.

9. What potential difficulties might there be with this option?

The on-line schedule of classes might grow well beyond its current size as Honors students seek out courses through the Contract Honors option. Realistically, however, we do not envision dozens and dozens of students seeking out this option semester after semester. Moreover, the students will be limited to 6 units of Contract Honors credit for the time being, which will ensure that the Academic Information Office won't be burdened by too many requests to add "-H" courses. Finally, as mentioned before, we already have a number of co-convened and dedicated courses carrying the "H" designation. These courses do not have to be re-built again for this purpose.

Appendix

A. Guidelines for Faculty teaching a Contract Honors Course:

Suggestions for Additional Written Work, Lab Work, or In-class Discussion Tasks:

- Have Honors student write a longer paper, but meet with them regularly to discuss the draft and revision process.
- Have Honors students write short, weekly reaction/response papers on various topics.
- Have Honors students take the lead in running small groups during class time.
- Have Honors students take the lead during in-class peer editing sessions, during lab sessions, or during practicum sessions.
- Have Honors students attend a separate lab session wherein class concepts can be expanded upon during particular lab assignments.
- Have Honors students work create and maintain an on-line chat group or website related to the course objectives.
- Have students prepare, in writing, questions or comments relevant to course material and lead class discussion. Meet with students beforehand to discuss why they chose these particular questions and how they might organize the discussion.
- Add an additional take-home component to exams or assignments that require more in-depth research about the topic. Have students meet with the professor to go over this additional work.

Suggestions for Presentations:

- Have Honors student present information to the whole class on a topic of his/her choosing (or of the instructor's choosing). Have the class give the Honors student feedback about his/her presentations.
- Have Honors student assigned research task and have him/her present ideas to the class such that the entire class's perspective on a particular topic is enhanced.
- Debate and discussion: have instructor create a series of point/counterpoint discussions in class that model a formal debate. Honors student becomes responsible for each point, its support, and the counterpoint rebuttal. Perhaps switch positions for the debate and have Honors student argue the opposing point. Have either faculty or small group of students "judge" the debate.

- Require that Honors student teach a lesson: have Honors student take responsibility for teaching a chapter, a concept, or a method. Student should practice with professor first to ensure their understanding of the topic/lesson in question.
- Oral defense: have Honors student participate in an oral defense of a final project in front of the class.

Suggestions for Out-of-Class Work:

- Have instructor contact Honors student prior to the start of the semester, putting him/her in touch with on-line resources connected with course, and have Honors student read materials prior to the start of class.
- For a merged undergrad/grad class, have Honors student communicate with the graduate students on a regular basis prior to or after regular class times, making sure that grad students and Honors student are addressing assignments and projects in some fashion. Have grad students do some peer mentoring with Honors student as well.
- Have instructors help Honors student during office conferences with out-of-class projects related to course content and objectives.
- Have Honors student meet for a discussion group biweekly to address a more in-depth aspect of the course content or additional reading assignment. This might include a brief response paper to clarify thoughts and generate discussion.
- Have Honors student participate in out-of-class activities that extend class concepts. These might be lectures, arts events, guided hikes, tours, etc. Have Honors student prepare a brief oral presentation for the class about the relevance of the activity to the class.
- Have Honors student create a relevant out-of-class event (like a film series) for the entire class. Honors student would be responsible for the selection and justification of the event.
- Symposium Presentation: Honors hosts an annual Honors Symposium to showcase the work of students throughout the Program. Have Honors student prepare a project, paper, or creative work that relates to course content. Have student submit an abstract for the Symposium and present in this venue.
- Have instructor meet regularly with Honors student to discuss a particular article or chapter and a critique of that piece.
- Have Honors student participate in an oral defense of a final project out side of class time, with individual instructor or a group of instructors.
- NB: if more than one Honors student has signed up to receive Contract Honors credit for the same class with the same professor, then any of the suggestions above may be tailored to a group experience instead.

B. Course Catalogue Description of Barrett Honors College Course Requirements

(Note: Barrett Honors College students are not limited in terms of the number of Contract Honors courses that they may take to fulfill their Honors requirements. Students with more flexible majors end up taking a mixture of specified Honors courses, dedicated Honors courses, co-convened courses, and Contract Honors courses. Students with less flexible majors end up fulfilling most of their credits with Contract Honors courses. Mr. Will Roberts, head advisor for the Barrett Honors College, states that upwards of 70% of Honors courses that students take to fulfill their requirements are Contract Honors courses.)

Barrett Honors Requirements Overview

Barrett accepts high performing, academically engaged students and works with them in collaboration with all of the units at ASU to contribute to student success. Most students enter as Freshmen but about 90 each year enter after one or more semesters at a university or college (primarily from ASU). We admit students with up to 60 credits of college or university course work.

Below is a minimum set of guidelines for Barrett students. We do not expel students from Barrett for poor performance or falling behind on requirements, but work with them to meet the requirements. We wish to work with all of the units to help students meet their requirements, as well.

All students: Must complete a required number of honors courses (some specified, see below) and a thesis/creative project supervised and defended in front of a faculty committee. To graduate from Barrett, they must have a cumulative GPA of 3.25.

All students entering with lower division status (those who have completed fewer than 60 credits of coursework at a university or college following graduation from high school): These students must complete HON171 and HON272/273 (*The Human Event*) by the time they reach 45 credits at ASU or they will lose all honors privileges. They also must complete 36 honors credits, at least 18 of which must be upper division. Students can have as many as 30 of the 36 honors credits as upper division courses.

Students entering with upper division status (those who have completed 60 credits of coursework at a university or college following graduation from high school): These students must complete 21 honors credits, all of which must be upper division and one of which must be an HON 300-level seminar.

To ensure completion of requirements:

Freshman year: Mandatory Advising must be completed during the Fall semester or the student will lose priority at registration in March.

Sophomore year: Mandatory Advising must be completed during the Fall semester or the student will lose priority at registration in March.

Junior year: Mandatory Advising must be completed during the Spring semester or the student will lose priority at registration in October of the following year.

All students entering Barrett after the first semester of their Freshman year: Must meet with a Barrett Academic Advisor upon admission to the college (within a few weeks of the start of the semester) to review all degree requirements. In addition, ALL students entering Barrett must register a valid email and telephone contact information with the Barrett Advising office upon admission of the college.

During the Senior year: Students must submit a thesis/creative project prospectus form one full semester before the semester during which they are defending a thesis/creative project to ensure processing of their record for graduation. In addition, students must complete a graduation check sheet with our honors advisors to ensure all requirements have been fulfilled. Finally, students must

defend their thesis/creative project, obtain signatures of completion from all committee members, and submit the final copy of the project to the Barrett advising office by our assigned deadline date to ensure eligibility to walk in the Barrett Convocation ceremony. These dates are posted on the web and in the honors advising office, and are given to all students during their honors advising appointments.

To graduate from Barrett, all students must complete ASU graduation requirements in an academic major.

Honors Contracts

Honors Contracts give students and faculty the opportunity to engage in innovative and interesting course assignments for honors credit. The Honors Contract option is an opportunity to be creative about learning and teaching, and a way to tailor the curriculum to meet student interests.

This arrangement is formalized via contract in which the student and faculty renegotiate the course requirements. As with all honors courses, only courses taught by regularly appointed faculty members or by distinguished visitors are eligible to carry the Honors Contract designation. Contracts should be explicit and fully detail the expectations for both the quantity and quality of work.

The student will initiate the Honors Contract process. **The deadline for Fall Semester was Sunday, September 21, 2008.** (Late contracts are not accepted and the student does not earn honors credit for the course).

All work for Honors Contract credit must be completed during the semester in which the student has registered for the course. Fulfillment of the agreement is documented by a completion form, sent to the instructor by the honors college and returned by him/her no later than one month after the last day of class for that semester.

Student Guide for Making Honors Contracts :

1. Approach your professor during the first few weeks of class to see if he or she is willing to develop an enriched experience for the target course. It may include extra meetings with the professor, extra reading, and/or extra writing or speaking.
2. Make sure you agree with the plan before verbally agreeing. Remember, this is a collaborative effort that you approve, as well.
3. Complete a Barrett Honors Contract online.
4. Do not fill out another contract if information is incorrect. Contact the Honors Advising office to make the changes to the original contract.
5. Check with your professor to ensure that he/she received the electronic contract and felt the information represented your oral agreement.
6. Meet regularly with your professor during the semester; if he/she does not request frequent discussions, take the initiative to check with him/her for an update on your progress.
7. If you feel the need to drop the contract mid-semester, speak with your professor for advice before making a final decision. Contact the Honors Advising office so we can update your records.
8. Turn in your project by the final deadline date.

Suggested enrichment activities vary by area of discipline:

- Conduct an individual research project or assist with faculty research
- Create, test, and evaluate a software program
- Prepare and present a class lecture
- Facilitate weekly meetings with faculty outside of class
- Complete a small group project with other honors students
- Produce a research paper
- Attend breakout sessions with faculty and other honors students

***Note that all official transcripts will be updated by the Registrar's office 2-3 months after the end of the semester you complete the footnote project.

Honors Courses

The goal of the College's curriculum is to develop habits of mind that enable persons to be lifelong

learners, creative problem solvers, and participatory citizens in a democratic society. The College emphasizes small classes, generally limited to 19 students; seminars, multi-disciplinary team taught courses and other engaged modes of learning; and the development of critical reading, discussion, and writing skills. The College appoints faculty members who are responsible for offering the core honors curriculum, but the College otherwise utilizes the instructional and research resources of the University as a whole. In essence, The Human Event represents, in microcosm, the great benefits of becoming part of the Barrett Honors College - small, student-centered, seminar-style classes in which you and your classmates explore the world's greatest literature and most profound ideas with a faculty member chosen for his or her ability to facilitate lively, meaningful discussion. In this intellectually charged atmosphere, there is a bonding that takes place among students over the course of the year, and student-faculty interaction becomes a meaningful mentoring experience.

In essence, there are three different ways to take honors courses:

1) HON prefix courses are offered at the lower division (100 and 200) level and at the upper division (300 and 400) level. HON courses have a maximum enrollment of 19 students, are conducted in seminar format, are interdisciplinary in content and approach, and have a significant writing component. These courses are taught primarily by the faculty in Barrett Honors College, but each semester some HON courses are taught by disciplinary faculty.

2) Honors-only courses carry the prefix of the department offering the course. They are designed to challenge students in a small class format and develop in two ways:

- a) breakout sections of large lecture courses and
- b) stand alone seminars.

Both forms are limited to Honors students (although in exceptional cases outstanding non-Honors students can be added with permission of the professor). Honors-only sections and seminars must be taught by regular faculty, not by graduate students or temporary hires. In addition, they must:

- ~ have no more than 25 students
- ~ engage students in discussion
- ~ offer a challenging curriculum
- ~ include a significant writing component appropriate to the discipline.

3) Honors Contracts are not separate courses. They are individual contracts made between the professor teaching a course and an honors college student in the course. They are intended to build relationships between students and faculty, as well as to challenge and engage honors students beyond the requirements of the course. Honors Contracts are the most varied of the honors experiences at ASU. They should involve discussions between the faculty and student outside of the normal class period and often involve supplemental reading, writing, or speaking assignments that build communication skills and knowledge in the subject area. For more information on Honors Contracts including how to establish one, [click here](#).



NORTHERN ARIZONA UNIVERSITY

Honors Program HONORS CONTRACT PROPOSAL

An Honors Contract allows Honors students to earn Honors credit for regularly-offered NAU classes using the following guidelines:

- o Class should be upper division (numbered 300 or higher);
- o Class must be taught by a full-time NAU faculty member;
- o Contract proposal must be approved by the instructor of the class, the offering department chair and the Honors Director before enrollment; and
- o No more than 6 units of such coursework may be applied to fulfill Honors requirements.

Contracts may also be proposed between groups of students and a single instructor. Please include this request within your written proposal, and submit all completed materials together.

STUDENT INFORMATION

| | |
|---------------|-------------------------|
| Name | NAU ID Number |
| Email Address | Telephone () |

By signing this form, you signify that you have read, understood, and agree to adhere to all of the Guidelines relating to the completion of this course, as described in the Honors Contract Guidelines (see reverse). You agree to fulfill all of the course requirements, including the requirements that enhance the course as an Honors experience.

| | |
|-------------------|------|
| Student Signature | Date |
|-------------------|------|

CLASS INFORMATION

| Term | Course Subject & Number, ie, PSY 101 | Course Title | # of Units | Section # | Class # | Instructor Name |
|------|--------------------------------------|--------------|------------|-----------|---------|-----------------|
| | | | | | | |

INSTRUCTOR INFORMATION

By signing this form, you signify that you have read, understood, and agree to adhere to all of the Guidelines relating to the completion of this course, as described in the Honors Contract Guidelines (see reverse). You agree to fulfill all of the course requirements, including the requirements that enhance the course as an Honors experience.

| | | | | | |
|-------------------|-------|-----------------------|-----|------------|------|
| Instructor Name | | Instructor Signature | | | Date |
| Instructor EmplID | Email | Phone Extension 3- | Box | Department | |

DEPARTMENT CHAIR APPROVAL

This approval to be granted after instructor approval and prior to Honors Director approval.

| | | |
|------------|-----------------|------|
| Chair Name | Chair Signature | Date |
|------------|-----------------|------|

HONORS OFFICE APPROVAL

| | | | | | | |
|-----------------------------------|----------------|---------------------------|----------------|---|--------------|-----------|
| Rcv'd in Office Date/Initials: | Class created: | Class Number Assigned: | Class Section: | Copy/Distributed: | Logged/Date: | |
| Honors Director Signature | | | | Approved? <input type="checkbox"/> YES <input type="checkbox"/> NO | Date | Enrolled? |

Guidelines for Honors Contracts

GENERAL INSTRUCTIONS:

To pursue an Honors Contract:

- Expect the review and approval of this proposal to take a **minimum of three business days after submission to Honors**. We cannot guarantee that proposals received after the first day of the second week of classes will be approved prior to NAU's published "Deadline to Add" classes.
- It is recommended that students consult with the "Honors Contract Suggestions" with the instructor.
- Consult the guidelines on front of sheet for classes eligible for Honors Contract.
- The complete form (including all signatures) and proposal must be returned to the Honors Office for the Director's approval. Incomplete applications or proposals will not be considered.
- Once approved, the Honors Program will provide the student a unique class number for the course, provide departmental permission to enroll, and send copies of the approved form to the student, instructor, and department chair, as listed.
- If a proposal is denied, the student will be notified immediately and provided an opportunity to discuss possible changes to the proposal with the Honors Director for possible re-submission.
- Students must secure the approval of the Honors Director prior to beginning their Contract Honors experience.

POSSIBLE METHODS TO ADD AN HONORS COMPONENT TO REGULAR CLASS TO CREATE A CONTRACT HONORS EXPERIENCE

An Honors experience allows a student to explore a course's content, ideas, and issues in both depth and breadth, through enhancements that the instructor provides the student through rewarding research opportunities, group projects, oral presentation assignments, lab projects, interdisciplinary and cross-cultural perspectives, and/or extra meetings with the student, among other methods. If an extra, or longer, project or paper is assigned as the Honors experience in a particular class, then the instructor might find ways to use this added component in order to engage the student in meaningful conversation, to encourage revision opportunities, and/or to prepare the student for presentation or publication opportunities.

Suggestions for Additional Written Work, Lab Work, or In-class Discussion Tasks:

- Write a longer paper, but meet with them regularly to discuss the draft and revision process.
- Write short, weekly reaction/response papers on various topics.
- Take the lead in running small groups during class time.
- Take the lead during in-class peer editing sessions, during lab sessions, or during practicum sessions.
- Attend a separate lab session wherein class concepts can be expanded upon during particular lab assignments.
- Create and maintain an on-line chat group or website related to the course objectives.
- Prepare, in writing, questions or comments relevant to course material and lead class discussion. Meet with students beforehand to discuss why they chose these particular questions and how they might organize the discussion.
- Add an additional take-home component to exams or assignments that require more in-depth research about the topic. Meet with your professor to go over this additional work.

Suggestions for Presentations:

- Present information to the whole class on a topic of your choosing (or of the instructor's choosing). Have the class give you feedback about your presentations.
- Conduct research task and present ideas to the class such that the entire class's perspective on a particular topic is enhanced.
- Debate and discussion: have instructor (or you) create a series of point/counterpoint discussions in class that model a formal debate. Be responsible for each point, its support, and the counterpoint rebuttal. Perhaps switch positions for the debate and have Honors student argue the opposing point. Ask either faculty or small group of students "judge" the debate.
- Teach a lesson: take responsibility for teaching a chapter, a concept, or a method. Practice with professor first to ensure your understanding of the topic/lesson in question.
- Oral defense: Participate in an oral defense of a final project in front of the class.

Suggestions for Out-of-Class Work:

- Have instructor contact Honors student prior to the start of the semester, putting him/her in touch with on-line resources connected with course, and have Honors student read materials prior to the start of class.
- For a merged undergrad/grad class, communicate with the graduate students on a regular basis prior to or after regular class times, making sure that grad students and you are addressing assignments and projects in some fashion. Have grad students do some peer mentoring with you as well.
- Meet for a discussion group biweekly to address a more in-depth aspect of the course content or additional reading assignment. This might include a brief response paper to clarify thoughts and generate discussion.
- Participate in out-of-class activities that extend class concepts. These might be lectures, arts events, guided hikes, tours, etc. Prepare a brief oral presentation for the class about the relevance of the activity to the class.
- Create a relevant out-of-class event (like a film series) for the entire class. Selection and justify the event yourself.
- Symposium Presentation: Honors hosts an annual Honors Symposium to showcase the work of students throughout the Program. Prepare a project, paper, or creative work that relates to course content. Submit an abstract for the Symposium and present in this venue.
- Meet regularly with your instructor to discuss a particular article or chapter and a critique of that piece.
- Participate in an oral defense of a final project out side of class time, with individual instructor or a group of instructors.

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.

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

Fall 2009

3. College **The W. A. Franke
College of Business**

4. Academic Unit /Department Economics

5. Course subject/catalog number ECO 328

6. Units/Credit Hours 3

7. Long course title The Political Economy of Energy
(max 100 characters including spaces)

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

Political Economy of Energy

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

The issues, theory and public policy of energy economics; the cultural, social and ethical issues of energy economics; history of various forms of human energy conversion and the potential future forms of energy conversion. Prerequisites:

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)

Junior Status

15. Corequisites (must be completed *with* proposed course)

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) 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: Dean Smith, Julie Mueller, Bing Zhao

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

Because this is an interdisciplinary course students need to have a mature understanding of general issues of pertaining to the current environment, without requisite skill levels in economic theory.

For Official AIO Use Only:
Component Type
Consent
Topics Course

35. Approvals

Department Chair (if appropriate) _____ Date 11/5/08
Chair of college curriculum committee _____ Date 11/12/08
Dean of college _____ Date _____

For Committees use only

_____ Date 12/2/08
For University Curriculum Committee

Action taken: Approved as submitted _____ Approved as modified _____

Accepted by the curriculum committee on 10/22/2008



NORTHERN ARIZONA
UNIVERSITY

W. P. Carey College of Business

MASTER SYLLABUS
ECO 328 The Political Economy of Energy
3 Credit Hours

I. **Catalog Description:** The issues, theory and public policy of energy economics; the cultural, social and ethical issues of energy economics; history of various forms of human energy conversion and the potential future forms of energy conversion.

I. **Prerequisites:**

Courses: Junior Status

Justification: Because this is an interdisciplinary course students need to have a mature understanding of general issues of pertaining to the current environment, without requisite skill levels in economic theory.

II. **Course Learning Goals:** Upon completion of the course students will be able to:

1. Explain the energy issues resulting from human energy conversion.
2. Explain issues influencing the human experience and to appreciate the normative aspects of the issues relating to energy conversion.
3. Explain a cognizance of the costs and benefits of various types of energy conversion.

III. **Course Materials:** Sample

Sandalow, David, *Freedom From Oil*, McGraw Hill, 2008

Smith, Dean Howard, Energy Reading packet

Additional selected readings

V. **Teaching Methods:**

The lecture periods will be used to develop, analyze and openly discuss the theories and policies presented in the assigned readings. The class discussion will clarify and extend the material presented in the readings; as such preparation and attendance are essential.

Given the normative nature of the material, it is expected that lively class discussions will take place.

VI. Mechanisms for Feedback to Students/Interaction Between Students and Professors:

The professor provides written comments and evaluations on all assignments for this course. Students also have the opportunity to interact with the professor during office hours and through the campus e-mail system.

VII. Evaluation Tools:

A minimum of four (4) evaluations are required including at least one significant writing assignment when appropriate as determined by the Area. At least one evaluation must be returned to students prior to the last day to drop with a W.

VIII. Use of Technology and Information Systems

Extensive use of the web will be used to facilitate the learning experience.

IX. Collaborative or Team Activities

Group projects may be used.

X. Projects

Research projects may be a part of the class.

XI. Statement Regarding Academic Dishonesty

Any student caught cheating on an exam or plagiarizing on an assigned paper will receive a grade of F for the course and will be reported to the appropriate University officials.

XII. Course Content:

A. Course Topics: (sample)

1. 1. Social Decisions
 - a. The basic physics of energy conversion
 - b. 1 week
2. Energy Use and the Consequences
 - a. The basic chemistry, physics and biology of energy conversion
 - b. 1 week
3. The Basic Economics of Energy
 - a. Externalities
 - b. Coase and what he really wrote

- c. Second best strategies
- d. 1 week
- 4. Global Warming issues
 - a. It is: IPCC 3
 - b. Stern report
 - c. Mitigation versus avoidance
 - d. 1 week
- 5. The History of Energy
 - a. Europe as a case study from uncontrolled solar to controlled solar to fossil fuels
 - b. How did we get into this mess: the big OOPS?
- 6. The Global Social Costs of Energy
 - a. Health
 - b. Agriculture
 - c. Migration
 - d. Biodiversity
- 7. Energy Efficiency
 - a. More than light bulbs
- 8. Electricity Production and Pricing
 - a. California ISO as a model:
http://www.caiso.com/MRTU_Overview/caliso_frame_c.html
 - b. Extremely complex algorithms
 - c. The Electricity Grid
- 9. Gasoline Pricing
- 10. Discovering Life Alternatives
- 11. Food and energy
 - a. Water and gas presentation: CA
- 12. Village Based Production
 - a. Reinventing the system: AOZ
- 13. A Hydrogen Economy?
 - a. Reinventing transportation
- 14. If Not Now, When?
 - a. Class discussion
- 15. If Not Us, Who?
 - a. Class discussion

B. General Knowledge and Management Skills *

| Note: Definitions provided on next page. | Included In This class: Y/N | Describe Required Graded Work If Applicable (Include Both Exam And Non-Exam Work) | Indicate the extent to which the knowledge or skill area is represented in the course grade ** |
|---|-----------------------------|---|--|
| Oral Communication | Y | Presentations | 10% |
| Written Communication | Y | All Exams and Projects | No specific grade |
| Analytic Skills | Y | All Exams and Projects | 50% |
| Reflective Thinking | Y | Discussion papers | No specific grade |
| Ethics and Social Responsibility | Y | Exams | No specific grade |
| Global and Environmental Awareness | Y | Exams and research project | 100% |
| Multicultural and Diversity Understanding | Y | Exams | No specific grade |
| Financial Theories, Analysis and Reporting | Maybe | Research project | N/A |
| Integrated production and distribution of goods, services and information | Y | Exams | N/A |
| Group and Individual dynamics in Organizations | N | N/A | N/A |

** Minimal 2-5%....6-10%.....11-25%.....26-50%....51+% Extensive.

Note: Some areas may have 0% and the column total does not necessarily equal 100%.

*The chart should not be included on the individual course syllabus. However, the minimum requirements as defined in this chart should be reflected in the course syllabus. The descriptions of graded work represent options for delivering the minimum requirement. However, a skill area may be included in the course, but not have a graded component (e.g. Students may work on an assignment in class as part of a team which may develop their understanding of group dynamics or analytical skills. But, they may be graded only on their understanding of the assignment topic—not on their group dynamic or analytical skills even though those skills may be developed).

** Minimal 2-5%....6-10%.....11-25%.....26-50%....51+% Extensive.

Note: Some areas may have 0% and the column total does not necessarily equal 100%

9. For undergraduate plans, will a milestone** be used to:
- a. verify satisfactory completion of a non course requirement.
 - 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

Students will:

1. **Apply the principle of opportunity cost to the decision-making process**
2. **Apply the principle of marginal analysis to the decision-making process**
3. **Apply supply and demand analysis to the decision-making process**
4. **Interpret the sources and impacts of macroeconomic fluctuations**
5. **Analyze the application of various monetary and fiscal policies to economic problems**

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

The change to the program reflects the addition of one new course in Energy Economics. The course content is in line with NAU's sustainable environment initiatives and is relevant to current issues with respect to resource use and resource policy in today's economy.

12. If this academic plan/subplan will require additional faculty, space, or equipment, how will these requirements be satisfied?
No new needs

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.
No

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

Certifications

| | |
|--|-----------------|
| Department Chair/ Unit Head (if appropriate) | Date |
| <i>Lawrence C. Mohrman</i> | <i>11/5/08</i> |
| Chair of college curriculum committee | Date |
| <i>EM Perdy</i> | <i>11/12/08</i> |
| Dean of college | Date |

For committee use only

| | |
|-------------------------------------|----------------|
| <i>Bob Jeff</i> | <i>12/2/08</i> |
| For University Curriculum Committee | Date |

Action taken: approved as submitted approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

| | | | |
|-----------------------------|---|---|--|
| 1. College | The W. A. Franke College of Business | 2. Academic Unit/Department | |
| 3. Academic Plan Name | Minor in Economics | 4. Subplan (if applicable)? | |
| 5. Effective Date | FALL 2009 | | |
| 6. Is this proposal for a : | <input type="checkbox"/> New Plan | <input type="checkbox"/> XPlan Change* | <input type="checkbox"/> Plan Deletion |
| | <input type="checkbox"/> New Subplan | <input type="checkbox"/> Subplan Change | <input type="checkbox"/> Subplan Deletion |

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

7. For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the **current** on line 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.

Minor in Economics

To complete this minor, you take the following 18 units with a cumulative grade point average of at least 2.0:

- ECO 284 and 285 (6 units)
- four upper-division economics courses (12 units)

You must complete at least 9 units of minor courses at NAU, and you must complete the lower-division business courses before you can enroll in upper-division business courses.

You may not minor in a business discipline if your major is in business.

Be aware that some courses required for your minor may have prerequisites that you must also take. Check NAU's Course Catalog to find out.

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.)

Minor in Economics

To complete this minor, you take the following 18 units with a cumulative grade point average of at least 2.0:

- ECO 284 and 285 (6 units)
- four upper-division economics courses (12 units)

You must complete at least 9 units of minor courses at NAU, and you must complete the lower-division business courses before you can enroll in upper-division business courses.

You must have completed all the coursework used to fill ~~business major and core~~ *Economics Minor* requirements within the last 10 years

You may not minor in a business discipline if your major is in business.

Be aware that some courses required for your minor may have prerequisites that you must also take. Check NAU's Course Catalog to find out.

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.
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.
 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

11. Justification for proposal. Please indicate how past assessments of student learning prompted proposed changes.
This statement will bring our minors in line with our bachelors degree.

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

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.

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

Certifications

Department Chair/ Unit Head (if appropriate)

Date

Lanana C. Mohrman
Chair of college curriculum committee

11/5/08
Date

Bill Jacoby
Dean of college

11/12/08
Date

For committee use only

[Handwritten Signature]

12/2/08

For University Curriculum Committee _____ Date

Action taken: _____ approved as submitted approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

| | | | |
|-----------------------------|--|---|--|
| 1. College | The W. A. Franke College of Business | 2. Academic Unit/Department | School of Hotel and Restaurant Management |
| 3. Academic Plan Name | Hospitality Marketing and Sales Certificate for HRM majors | 4. Subplan (if applicable)? | |
| 5. Effective Date | FALL 2009 | | |
| 6. Is this proposal for a : | <input checked="" type="checkbox"/> New Plan | <input type="checkbox"/> Plan Change* | <input type="checkbox"/> Plan Deletion |
| | <input type="checkbox"/> New Subplan | <input type="checkbox"/> Subplan Change | <input type="checkbox"/> Subplan Deletion |

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

| | |
|---|---|
| <p>7. For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the <i>current</i> on line academic catalog: http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm <i>Be sure you include all catalog text that pertains to this plan change</i></p> <p><i>For New Plans, leave this column blank.</i></p> | <p>Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing and strikethrough what is being deleted. <i>(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.)</i></p> <p>To complete this certificate you must be a declared HRM major and take the following units: 15 3 units MKT333 Introduction to Marketing 3 units MKT334 Consumer Behavior and Satisfaction 3 units MKT337 Professional Selling 3 units MKT436, Services Marketing 3 units HA400 Hospitality Sales Management.</p> |
| <p>8. For undergraduate plans, will this requirement be a student individualized plan*? <input checked="" type="checkbox"/> no <input type="checkbox"/> yes <small>*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.</small> 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.</p> | |

9. For undergraduate plans, will a milestone** be used to:
- a. verify satisfactory completion of a non course requirement.
 - 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

This certificate will better prepare HRM majors for hospitality careers in marketing and sales by providing additional coursework in marketing and consumer behavior.

This certificate will better prepare HRM majors for hospitality careers marketing and sales.

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

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.
No

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

Certifications JR Collins CURRICULUM OFFICER, HRM
Richard M. [Signature] 10/14/08
Department Chair/ Unit Head (if appropriate) Date
Lawrence C. [Signature] 10/22/08
Chair of college curriculum committee Date
EM [Signature] 11/12/08
Dean of college Date
For committee use only [Signature] 12/2/08
For University Curriculum Committee Date

Action taken: _____ approved as submitted approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

| | | | |
|-----------------------------|--|---|--|
| 1. College | <u>The W. A. Franke College of Business</u> | 2. Academic Unit/Department | _____ |
| 3. Academic Plan Name | <u>The W. A. Franke College of Business Certificates</u> | 4. Subplan (if applicable)? | _____ |
| 5. Effective Date | <u>FALL 2009</u> | | |
| 6. Is this proposal for a : | <input type="checkbox"/> New Plan | <input checked="" type="checkbox"/> XPlan Change* | <input type="checkbox"/> Plan Deletion |
| | <input type="checkbox"/> New Subplan | <input type="checkbox"/> Subplan Change | <input type="checkbox"/> Subplan Deletion |

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

7.

For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the *current* on line 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.

General Information

We offer a number of non-degree certificates, some of which are open to all NAU students.

We guarantee your acceptance into any of our certificate plans that are open to all NAU students if you have:

- major status in The W. A. Franke College of Business
- or a 2.75 cumulative grade point average with at least 30 units earned

If you have a grade point average of less than 2.75 but at least 2.5, we will admit you into a certificate plan on a space-available basis, based on the rank order of your grade point average.

For a list of certificates open to nonbusiness majors, contact the Office of Academic Services in The W. A. Franke College of Business. If you are not a business major but wish to complete a certificate through The W. A. Franke College of Business, you must apply to the Office of Academic Services.

Check NAU's Course Catalog for a list of current prerequisites for certificate courses.

Also note that you must have junior status in order to enroll in upper-division business courses.

Finally, you should know that you must have at least 6 units of certificate coursework that are not used in your major or other certificates, and you must complete at least 6 units of certificate coursework at NAU.

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.)

General Information

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We guarantee your acceptance into any of our certificate plans that are open to all NAU students if you have:

- major status in The W. A. Franke College of Business
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If you have a grade point average of less than 2.75 but at least 2.5, we will admit you into a certificate plan on a space-available basis, based on the rank order of your grade point average.

For a list of certificates open to nonbusiness majors, contact the Office of Academic Services in The W. A. Franke College of Business. If you are not a business major but wish to complete a certificate through The W. A. Franke College of Business, you must apply to the Office of Academic Services.

Check NAU's Course Catalog for a list of current prerequisites for certificate courses.

Also note that you must have junior status in order to enroll in upper-division business courses.

You must have completed all the coursework used to fill business ~~major and core~~ certificate requirements within the last 10 years

Finally, you should know that you must have at least 6 units of certificate coursework that are not used in your major or other certificates, and you must complete at least 6 units of certificate coursework at NAU.

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.

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10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

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

This statement will bring all of our certificates in line with our bachelors degree.

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

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

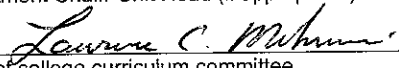
If so, attach supporting documentation from the affected departments/units and college dean.

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

Certifications

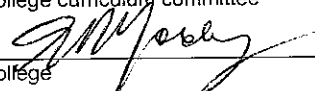
Department Chair/ Unit Head (if appropriate)

Date


Chair of college curriculum committee

11/5/08

Date


Dean of college

11/12/08

Date

For committee use only

For University Curriculum Committee

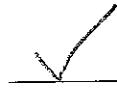
Ron Bill

12/2/08

Date

Action taken:

approved as submitted



approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

Name of plan?

**Elementary Education, Early Childhood Education,
Secondary Education, Special and Elementary
Education**

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: **Dr. Willard Gilbert, Dr. Jon Reyhner,
 Dr. Louse Lockard, Jennie DeGroat,
 Dr. Natalie Hess**

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

By 2009, all approved teacher preparation programs must include coursework that insures that candidates are eligible to receive full endorsement in Structured English Immersion (SEI). Full SEI endorsement consists of two courses: one provisional/augmented and one completion, each aligned to a different set of SEI content objectives. The BME program currently uses BME 430 (elementary) or BME 437 (secondary) to fulfill the requirements for a completion course for the SEI endorsement, but lacked a second, provisional/augmented course. To address this, the faculty created BME 300, aligning that course content and assessments with the provisional/augmented SEI objectives Arizona Department of Education. The BME 300 provisional/augmented SEI course will have no prerequisites to allow candidates to take the course early in their program of study. However, the BME 531 and BME 437 courses will require that candidates have successfully completed this initial provisional/augmented course. The addition of BME 300 will insure that all candidates in Arizona State Board of Education approved teacher preparation programs have available the required 2 courses needed for full SEI endorsement.

| |
|--|
| For Official AIO Use Only: Component Type Consent Topics Course |
|--|

35. Approvals


 Department Chair (if appropriate)

11/14/2008
 Date

Patricia J. Put

Chair of college curriculum committee

11/13/08

Date

Carolyn J. Smith

Dean of college

11/15/08

Date

For Committees use only

Bob Bell

11/2/08

For University Curriculum Committee

Date

Action taken:

✓

Approved as submitted

Approved as modified



NORTHERN ARIZONA UNIVERSITY

College of Education

Vision Statement

We develop educational leaders who create tomorrow's opportunities.

Mission Statement

Our mission is to prepare professionals to serve and lead education and human services organizations.

BME 300

Introduction to Structured English Immersion

Department of Educational Specialties

Course Syllabus

3 Credit Hours

General Information:

Instructor:

Class Schedule:

Office: Hours:

E-mail Address:

Course Prerequisite: There are no prerequisites for this course.

Course Description: Introduction to the teaching of content in English to limited English proficient students in grades P-12 using appropriate approaches, methods and techniques. Students will become familiar with the study of the philosophy and theory of Structured English Immersion, and techniques, approaches and strategies of Structured English Immersion in P-12 settings.

Student Learning Expectations: Students will be able to do the following in each curricular area:

ELL Proficiency Standards Objectives (3 Hours)

1. Describe the alignment between Arizona State Language Arts Standards and Arizona ELL Proficiency Standards.
2. Demonstrate how to use ELL Proficiency Standards to plan, deliver, and evaluate instruction.
3. Demonstrate how to integrate ELL Proficiency Standards in all content areas.

Assessment Objectives (3 Hours)

1. Analyze the content and use of the Arizona English Language Learner Assessment (AZELLA) in guiding ELL instruction.
2. Discuss the relevance of state-mandated achievement for ELLs.
3. Identify and use alternative methods of assessment.

Foundations of SEI Objectives (6 Hours)

1. Know the legal, historical and educational reasons for SEI.
2. Know basic SEI terminology.
3. List language acquisition theoretical principals.
4. Define the role of culture in learning.

SEI Strategies Objectives (33 Hours)

1. Demonstrate multiple strategies to improve ELL achievement (comprehensible input, types of learner feedback, grouping structures and techniques, building background and vocabulary development, and student engagement).

Course Structure/Approach:

These objectives will be accomplished through reading of required texts, class discussions, written assignments, exams, and a thematic unit which includes lessons in four content areas.

Required Texts:

Peregoy, S., & Boyle, O. (2008). *Reading, writing and learning in ESL: A resource book for teaching K-12 English learners* (5th ed.). Upper Saddle River, NJ: Pearson.

Herrell, A., & Jordan, M. (2008). *50 strategies for teaching English language learners* (3rd ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

Alternate Texts

Diaz-Rico, L. (2008). *A course for teaching English learners*. New York: Pearson.

Echevarria, J., & Graves, A. (2006). *Sheltered content Instruction: Teaching English language learners with diverse abilities* (3rd ed.). Boston: Allyn & Bacon.

Freeman, Y.S., & Freeman, D.E. (2007). *English language learners: The essential guide (theory and practice)*. New York, NY: Scholastic Teaching Resources.

Lightbown, P.M. & Spada, N. (1993). *How languages are learned*. Oxford: Oxford University Press.

Ricahrd-Amato, P. (2003). *Making it happen: From interactive to participatory language teaching*. New York: Pearson.

Recommended Articles Available on Vista in the Course Resources folder

ColorinColorado (2007). *Using cognates to develop comprehension in English*. Retrieved October 2, 2008 from <http://colorincolorado.org/article/14307>

McLaughlin, B. (1993). Myths and misconceptions about second language learning. What every teacher needs to unlearn. Santa Cruz, CA: National Center for Research on Cultural Diversity and Second Language Learning. Retrieved October 2, 2008 from <http://www.ncela.gwu.edu/pubs/symposia/reading/article6/mclaughlin93.html>

Harper, C., & de Jong, E. (2004). Misconceptions about teaching English-language learners. *Journal of Adolescent and Adult Literacy*, 48, 152-162.

Hess, N. (2008). Getting adolescents hooked on good books: From the celluloid to the literate. *Arizona Reading Journal*, 34, 8-12.

Hess, N. (2003). Of cows and cowards, and content-based instruction: The six-t's approach to literature. *The CA-TESOL Journal*, 15, 113-127.

Shohamy, E. (2001). Democratic assessment as an alternative. *Language Testing*, 18, 373-391.

Short, D. & Spanos, G. (1989). Teaching mathematics to limited English proficient students *ERIC Clearinghouse on Language and Linguistics*. Retrieved October 2, 2008 from <http://www.cal.org/resources/ararchive/digest/1989math.html>

Short, D.J. & Spanos, G. (1989). What elementary teachers need to know about language . *ERIC Clearinghouse on Language and Linguistics*. Retrieved October 2, 2008 from <http://www.cal.org/resources/archive/digest/1989math.html>

Web Resources available in Vista in Web Links

Arizona Department of Education Office of English Language Acquisition Services
<http://www.ade.state.az.us/oelas/>

Institute of Education Sciences. What Works Clearinghouse.
<http://ies.ed.gov/ncee/wwc/reports/topic.aspx?tid=10>

Internet TESL Journal ESL Grammar and English Usage
[http://iteslj.org/links/ESL/Grammar and English Usage/](http://iteslj.org/links/ESL/Grammar%20and%20English%20Usage/)

National Clearinghouse for English Language Acquisition
<http://www.ncela.gwu.edu/>

Portland, OR Public Schools.
The ESL/Bilingual education research guide for mainstream teachers.
<http://www.pps.k12.or.us/curriculum>

Course Outline

Course Outline

| Week | Topic | Objectives | Assigned Reading |
|------|---|--|------------------|
| 1 | Who are English Language Learners? | Foundations of SEI Objective 1. Know the legal, historical and educational reasons for SEI | Ch. 1 |
| 2 | How do cultural differences affect teaching and Learning? | Foundations of SEI Objective 4. Define the role of culture in learning | Ch. 1 |
| 3 | Second Language Acquisition | Foundations of SEI Objective 3. List language acquisition theoretical principles | Ch. 2 |
| 4 | Classroom Practice for English Learner Instruction | SEI Strategies Objectives 1. Identify and use multiple strategies to improve student achievement. | Ch. 3 |
| 5 | Assessment of English Learners | Assessment Objectives 1. Analyze the content and use of the Arizona English Language Learner Assessment | Ch.3 AZELLA |
| 6 | Identification and Placement of students | Assessment Objectives 2. Discuss the relevance of state-mandated achievement for ELLs | Ch. 3 |
| 7 | Oral Language Development in Second Language Acquisition | SEI Strategies Objectives 1. Identify and use multiple strategies to improve student achievement. Assessment Objectives 1. Identify and use alternative methods of assessment | Ch. 4 |
| 8 | Emergent Literacy | SEI Strategies Objectives 1. Identify and use multiple strategies to improve student achievement. | Ch. 5 |
| 9 | Vocabulary Development | SEI Strategies Objectives 1. Identify and use multiple strategies to improve student achievement. | Ch. 6 |
| 10 | Developmental Phases in Second Language Writing | Foundations of SEI Objective 3. List language acquisition theoretical principles | Ch. 7 |
| 11 | Assessing Second Language Readers' Progress | Assessment Objectives 3. Identify and use alternative methods of assessment | Ch. 8 |
| 12 | Strategies to Promote Reading Comprehension | SEI Strategies Objectives 1. Identify and use multiple strategies to improve student achievement. | Ch. 9 |
| 13 | Theme Studies: Providing a Meaningful Learning Context | ELL Proficiency Standards Objectives 1. Examine the format and alignment of ELL Proficiency Standards to the Arizona | Ch. 10 |

| | | | |
|----|--|--|--------|
| | | Language Arts Standards | |
| 14 | Theoretical Approaches to Reading Assessment | Assessment Objectives 1. Identify and use alternative methods of assessment | Ch. 11 |
| 15 | Evaluation/Synthesis of Lesson Plans | ELL Proficiency Standards 2. Use ELL Proficiency Standards to plan, deliver and evaluate instruction 3. Demonstrate the integration of ELL Proficiency standards in all content areas. | |

Assessment of Student Learning Outcomes: Suggested Methods of Assessment

1. Reading log. Identify a theme in the assigned reading and reflect on how this theme may inform your work with English learners in a current or future classroom setting.
2. Lesson Plans Select a theme and develop 4 ESL lesson plans appropriate to the community where you teach in 4 content areas you teach (mathematics, science, social studies, health, art, music, etc.) using a lesson plan form which includes: Grade/Class/ability level/ background/Subject, Standards, Theme, Lesson Topic, Content Objectives, Language Objectives, Key Vocabulary, Supplementary Materials, Grouping Option, Assessment and Lesson Sequence: Teach one of the lessons to a group of English Learners. Align the language objectives to the Arizona ELL Proficiency standards and to the Arizona Language Arts (Listening, Speaking, Reading, Writing) standards. Align the content objectives to the appropriate Arizona content standards (mathematics, science, social studies, health, art, music, etc.)

Teach and evaluate the final lesson plan. Your evaluation will include:

Preparation, Building Background, Comprehensible Input, Clear Explanation of Academic Tasks, Strategies, Interaction, Practice/Application, Effectiveness of Lesson Delivery, and Student Engagement

Reflective Essay: Write a reflection on this lesson Why is it necessary and desirable to teach such a lesson? Explain how all four language skills were used in this lesson. What did your students learn from this lesson? How do you know they learned this? How is this student learning reflective of the language standards for this lesson? What did not work well for student learning? What would you change to improve the lesson so it better supports EL students' language objectives?

Lesson Plan Rubric

| Standard | 1.Approaches Standard | 2.Meets Standard | 3.Exceeds Standard |
|--|--|---|---|
| 3.a. Planning for standards based ESL and content instruction. | Candidates are aware of content objectives and language objectives. Objectives are inappropriate for age and educational background of students. | • Candidates plan content and language objectives. Objectives are appropriate for age and educational background of students. | Candidates plan clearly defined language objectives. Content objectives are appropriate for age and educational background level of students. The lesson is designed for a classroom with multilevel learners from diverse backgrounds. |
| 3.a. Planning based on assessment of language | Candidates are aware of students' language | Candidates plan lesson based on assessment of | Candidates plan students' learning experiences based on assessment |

| | | | |
|--|---|---|--|
| proficiency | proficiency. Lesson does not include review of key concepts. | students' language proficiency and prior knowledge. Lesson includes a review of key concepts | of language proficiency and prior knowledge. Candidates conduct assessment of student comprehension and learning of all lesson objectives throughout the lesson. |
| 3.b. Organize learning around standards-based language learning objectives. | • Candidates are familiar with standards relevant to ESL and content instruction. Lesson delivery does not clearly support language objectives. | • Candidates clearly support content and language objectives by lesson delivery. Candidates provide opportunities for students to use strategies. | • Candidates integrate content and language objectives by lesson delivery. Candidates provide scaffolding techniques throughout the lesson assisting and supporting student understanding. |
| 3.b. Provide activities and materials that integrate listening, speaking, reading and writing. | • Candidates are aware that integrated learning activities build meaning through practice. Candidate uses activities that integrate some language skills. | Candidate uses activities that integrate all language skills (i.e. reading, writing, speaking and listening) | Candidates design activities that integrate all language skills and content areas through thematic and inquiry-based units. |
| 3.c. Use resources effectively in ESL and content instruction | • Candidates recognize EL students' various approaches to learning. No significant adaptation of content to all levels of student proficiency. | Candidates use supplementary materials. Candidates adapt content to all levels of student proficiency. | Candidates use supplementary materials to a high degree making the lesson clear and meaningful (e.g., computer programs, graphs, models, visuals) Candidates adapt content to all levels of student proficiency in a supportive classroom environment. |

3. Exams

Midterm and final exams will consist of essay questions that cover the content and application of assigned readings, lecture notes, and discussions.

Assessment Timeline

| Assignment | Date | Points |
|---|------|--------|
| Reading Log | | 120 |
| Lesson Plan 1 | | 50 |
| Lesson Plan 2 | | 50 |
| Midterm | | 100 |
| Lesson Plan 3 | | 50 |
| Lesson Plan 4 evaluation and reflection | | 150 |
| Final Exam | | 100 |

Grading System:

A=90-100% B=80-89% C=70-79% D=60-69% F= 59% or below.

Course Policies:

1. Because of the emergent and personalized nature of this course, regular class attendance and participation are crucial. You will participate in a bi-weekly class discussion and post a bi-weekly class assignment.
2. You will be expected to fully participate in class discussions and discuss the assigned readings.
3. Assignments will be accepted on or before due dates.
4. If you are unable to take an exam at the regularly scheduled time, the instructor should be contacted prior to the exam.
5. Work submitted is expected to be of college/professional quality and appearance. All assignments are to be checked for spelling, grammatical errors, and clarity.
6. Plagiarism/Cheating. Plagiarism is a willful act when a person knowingly uses the work of others and attempts to present it as his/her own. Please refer to the policy in the NAU Student Handbook on plagiarism and academic dishonesty.

University Policies:

NORTHERN ARIZONA UNIVERSITY 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 or from the NAU's Affirmative Action website <http://home.nau.edu/diversity/>. If you have concerns about this policy, it is important that you contact the departmental chair, dean's office, the Office of Student Life (928-523-5181), or NAU's Office of Affirmative Action (928-523-3312).

STUDENTS WITH DISABILITIES

If you have a documented disability, you can arrange for accommodations by contacting Disability Resources (DR) at 523-8773 (voice) or 523-6906 (TTY), dr@nau.edu (e-mail) or 928-523-8747 (fax). Students needing academic accommodations are required to register with DR and provide required disability related documentation. Although you may request an accommodation at any time, in order for DR to best meet your individual needs, you are urged to register and submit necessary documentation (www.nau.edu/dr) 8 weeks prior to the time you wish to receive accommodations. DR is strongly committed to the needs of student with disabilities and the promotion of Universal Design. Concerns or questions related to the accessibility of programs and facilities at NAU may be brought to the attention of DR or the Office of Affirmative Action and Equal Opportunity (523-3312).

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 monthly. 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 or on their website: <http://www.research.nau.edu/vpr/IRB/index.htm>. If you have questions, contact the IRB Coordinator in the Office of the Vice President for Research at 928-523-8288 or 523-4340.

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 G of NAU's Student Handbook <http://www4.nau.edu/stulife/handbookdishonesty.htm>.

ACADEMIC CONTACT HOUR POLICY

The Arizona Board of Regents Academic Contact Hour Policy (ABOR Handbook, 2-206, Academic Credit) states: "an hour of work is the equivalent of 50 minutes of class time...at least 15 contact hours of recitation, lecture, discussion, testing or evaluation, seminar, or colloquium as well as a minimum of 30 hours of student homework is required for each unit of credit."

The reasonable interpretation of this policy is that for every credit hour, a student should expect, on average, to do a minimum of two additional hours of work per week; e.g., preparation, homework, studying.

SENSITIVE COURSE MATERIALS

If an instructor believes it is appropriate, the syllabus should communicate to students that some course content may be considered sensitive by some students.

“University education aims to expand student understanding and awareness. Thus, it necessarily involves engagement with a wide range of information, ideas, and creative representations. In the course of college studies, students can expect to encounter—and critically appraise—materials that may differ from and perhaps challenge familiar understandings, ideas, and beliefs. Students are encouraged to discuss these matters with faculty.”

For further information, please visit:

<http://jan.ucc.nau.edu/academicadmin/policy1.html>

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.
2. New course effective beginning what term and year? (ex. Spring 2009, Summer 2009) *See effective dates schedule.* Fall 2009
3. College Social and Behavioral Sciences 4. Academic Unit /Department IHD
5. Course subject/catalog number DIS 201 6. Units/Credit Hours 3
7. Long course title Introduction to Disability
(max 100 characters including spaces)
8. Short course title (max. 30 characters including spaces) Introduction to Disability
9. Catalog course description (max. 30 words, excluding requisites).
- Introduction to Disability explores the disability experience from the perspective of the person with a disability (~~PWD~~), from how society views disabilities and considers the relationship between the two.
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 No 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 NA
(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) NA
15. Corequisites (must be completed *with* proposed course) NA
16. Is the course needed for a new or existing plan of study (major, minor, certificate)? yes no X
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) 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: Katherine Mahosky M.S. , Karen Applequist, Ph.D.

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

Over the past 10 years, Disability Studies has gained a central place in university curricula across the country. This course, Introduction to Disability serves to provide a first look at the meaning of disability and its connection to the human experience. By understanding the meanings ascribed to disability, students will explore the meaning of normalcy and in doing so uncover their own beliefs, values and perspectives about issues facing all of us as human beings. This course will allow an expansion of current curriculum offerings designed to enable students to examine how cultures vary and shape human experience. Students will become familiar with disability and disability culture and develop an appreciation for the unique features and perspectives offered through this lens.

| |
|---|
| For Official AIO Use Only: <input type="checkbox"/> Component Type <input type="checkbox"/> Consent <input type="checkbox"/> Topics Course |
|---|

35. Approvals

Richard W. Carroll 10/15/08
 Department Chair (if appropriate) Date

[Signature] Date
 Chair of college curriculum committee 10/20/08

[Signature] Date
 Dean of college

For Committees use only

[Signature] 12/2/08
 For University Curriculum Committee Date

Approved w/ change



NORTHERN ARIZONA UNIVERSITY
Institute for Human Development
Arizona University Center on Disabilities

The Institute for Human Development at Northern Arizona University conducts research, training, and service in support of disability policy and practice.

General Information:

College & Department SBS; Institute for Human Development
Course DIS 201 Introduction to Disability
Instructor: Katherine Mahosky, M.S. CCC-SLP
Credit Hours: 3
Prerequisites: None
Semester: Fall 2009
Phone: 523-3614
E-Mail: Katherine.Mahosky@nau.edu
Office: IHD #107
Office Hours: TBD

- **Course Website on Vista:** www.Vista.NAU.EDU
- **Course Evaluations:** http://www.nau.edu/course_evals

Your Instructional Needs

Please contact me to discuss options if the design or delivery of this course produces barriers to full and meaningful participation

Course Description:

This course is an introduction to the field of disability studies. It will explore the disability experience from the perspective of the person with a disability (PWD), from how society views disabilities and consider the relationship between these two perspectives. Students will examine the complexity of defining disability and reflect upon the construct of "normalcy" in the ways in which this concept has shaped the understanding of disability. Additionally, students will explore the PWD's response to disability and how society's view of disability influences that individual response. Lastly, students will explore the economical, health, educational and social systems, which support and/or prohibit people with disabilities from achieving independence in their lives.

Liberal Studies Program:

DIS 201 helps students to:

- Understand the connections between persons with disability and other minority groups in the US by examining definitions of disability (and normalcy) and categories of disability and the effects of "claiming" and/or being labeled as disabled on inclusion and/or exclusion within a group.

- Understand how inclusion within a disability group creates tensions and opportunities for an individual and society and that the dynamics of inclusion within a disability group change over time.
- Examine their beliefs about their own culture while exploring disability culture and analyze how their views about both cultures have been shaped.
- Understand how technology impacts all of our lives but that for many persons with disabilities technology provides the means for connections within and across environments, enhancing potential contributions to society and human life for all.

DIS 201 enhances students' understanding of the culture of disability. Through exploration and analysis of disability culture as experienced by persons with disabilities and as viewed by society, the student will gain an awareness of how disability culture shapes human experiences. Additionally, as students become familiar with the key concepts and issues which encompass disability studies they will gain an appreciation for the unique features and perspectives of disability culture and values. Students will gain an increased awareness of their own beliefs and values and how they've been shaped through the study of disability culture.

This course pays particular attention, through assignments, in-class activities and projects, to the skill of effective writing. Through written responses to the weekly questions which accompany the reading assignments, students will develop their ability to express their understanding as well as their beliefs regarding various topics within disability studies in a clear and concise manner using effective language. Additionally, in doing the video critique students will demonstrate their ability to write for a specific purpose using effective language and good organization of thought while using appropriate sentence structure, grammar, punctuation and spelling. Lastly, in creating a power point presentation students will demonstrate their ability to summarize cogent details from a book in addressing particular disability issues.

Student Learning Expectations/Outcomes for This Course:

- ❖ This course aligns with the guidelines set forth by the Society for Disability Studies. This course has used key elements of these guidelines as guiding principles.

With these guidelines in mind, the following are learning expectations/outcomes for this course:

By the end of the course, it is expected that you will:

| |
|--|
| Understand and articulate the multiple definitions of disability and normalcy. |
| State the most common categories of disability and explain the positive and negative implications of categorization. |
| Compare and contrast the major perspectives (medical, functional and environmental models) of disability. |
| Give examples of the complex set of factors which contribute to and shape an individual's response to their disability. |
| Describe sources of prejudice and discrimination towards persons with disabilities. |
| Analyze how society's construction of disability can effect the individual's perception of self. |
| Explore the continuum of services available to support persons with disabilities across the lifespan and understand how services and supports enable and constrain PWD's. |
| Identify the critical junctures (transitions) within a person's life where services and supports must evolve and change to meet each individual's needs and examine aspects of these supports which either inhibit and/or facilitate the person's growth toward an independent life. |

This course should help to build the following understandings:

1. Disability is a "natural part of the human experience".
2. Disability is universal concern.
3. Diversity is a central characteristic of disability culture.
4. A person's individual response to their disability is as unique as they are.
5. Society helps shape responses toward disability and person's with disabilities.
6. Resources, services and supports for persons with disabilities can have both positive and negative impacts on individuals and their families.

Course structure/approach:

This course will be a face-to-face instructional environment with an emphasis on class discussion surrounding weekly readings. Class participation is highly valued and will be facilitated each week by questions provided by the instructor. Additionally, some assignments require oral presentations by students or student groups. These presentations will be designed to facilitate the development of effective oral communication while providing essential content knowledge to the class.

Textbook and required materials:

Smart, Julie (2001). *Disability, Society, and the Individual*. Maryland: Aspen Publications.

Recommended optional materials/references:

Brown, Ivan & Percy, Marie. (2007). *A comprehensive guide to Intellectual & Developmental Disabilities*. Maryland: Paul H. Brookes Publishing Co.

A number of additional readings will be available through the VISTA shell available electronically. Please refer to the references below. The readings are included in the course outline with dates when the reading is due.

Bibliography of Resources*

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|---|
| Albrecht, G. L., Seelman, K. D., & Bury, M. (eds.) (2001). <i>Handbook of disability studies</i> . Thousand Oaks, CA: Sage. |
|---|

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|--|
| Brown, Ivan & Percy, Maire (Eds.). (2007). A comprehensive guide to: Intellectual and developmental disabilities. Baltimore, MD: Paul Brookes. |
| Foreman, Phil (2005). Language and Disability. <i>Journal of Intellectual & Developmental Disability</i> . Vol. 30 (1): 57-59. |
| Linton, Simi (1998). Claiming disability: Knowledge and identity. New York, NY: New York University Press. |
| Smart, Julie (2001). Disability, society, and the individual. Gaithersburg, MD: Aspen Publications. |
| World Health Organization (2002). Toward a common language for functioning, disability and health. Geneva, Switzerland. Pp 1-19. www.who.int/classification/icf |

Course Outline:

| Date(s) | Topic/Module | Readings/Assignments |
|----------------|---|---|
| Weeks 1 & 2 | Module 1: Course Overview Defining Normalcy Defining Disability Why Disability Studies? | Introduction and Ch. 1 (Text) Albrecht, Seelman & Bury Ch. 3 (Vista) Linton Ch. 1 & 5 (Vista) |
| Weeks 3, 4, 5 | Module 2: Disability Terminology & Language Categories of Disabilities Why categorize? Inclusion or exclusion? | Ivan Brown chapter 1 (Vista) Foreman: Language & disability (Vista) Ivan & Percy Ch. 3 (Vista) Quiz #1 |
| Week 6 & 7 | Module 3: Models of Disability WHO framework | Ch. 2 (Text) Towards a Common Language for Funct Disability & Health (Vista) |
| Week 8 & 9 | Module 4: Society's response to Disability Outside looking in | Ch. 3, 4, 5, 6 (Text) Video critique Quiz # 2 |
| Week 10 & 11 | Module 5: Individual Response to Disability Inside looking out | Ch. 7, 8 & 9 (Text) Book Jigsaw |

Person Centered Focus
Week 13 **Module 6:**
& 14 Services, Supports & Interventions across
the lifespan
1. Birth to three
2. Preschool
3. School Age (k-12)
4. Post secondary or School to work
5. Adulthood
6. Aging
Universal Access for Living and Learning

Quiz #3

Explore AzEIP website @
<https://www.azdes.gov/AzEIP/icc.asp>
Explore DOE website for preschool @
<http://www.ade.gov/earlychildhood/progr>
Explore DOE website for exceptional stu
<http://www.ade.az.gov/ess/>

Explore Universal Design websites:
<http://cast.org/> & <http://www.design.ncsu.edu>

Week 15 Reading Week
Week 16 **Final Exam Week**

Quiz #4

Assessment of Student Learning Outcomes:

The following describes assignments that will be due in this course. Please review this section carefully and ask for clarification from the instructor if there is something you don't understand.

Weekly reading/participation-(65 points) Each week you are required to be current with the week's reading assignment in order to be able to respond to the discussion questions and participate in the weekly discussions. Participation in class is worth 5 points each class period. Participation includes responding to comments, questions or observations from the instructor or your fellow classmates. Each class period you will be expected to contribute to the class discussion at least once in order to receive the 5 points.

Discussion questions-(130) As part of each week's reading assignment you will have accompanying questions to provoke your thinking while reading. You are to answer each question in writing and turn it in each week. Your written responses will be evaluated on;

- clear and concise responses which use effective language
- demonstrated relevance to the reading
- logical organization of thought

Additionally, you are to highlight a portion of the reading which stood out to you in terms of the questions posed. You are also encouraged to pose at least one question as a result of the reading; however, if you do not have a question every week it will not be counted against your grade. (10 points per week)

Projects and Assignments

Video critique- (25 points) View one of the following videos (videos not yet determined) and critique its content by writing a short 1 page paper addressing the following questions:

What disability category or categories are portrayed?

Is the disability portrayed in a way that is stereotypical?

Are there myths evidenced within the context of the character portrayal? If so, how are they portrayed, give an example.

The paper will be evaluated by the organization of thought, direct responses to the questions and the use of effective language.

Book jigsaw (50 points) You will be asked to choose from one of six books (book list not yet determined) offered in the class, which deal with an individual's response to disability. You will be assigned to a group based on the book chosen. Upon completion of the book your group will present a brief power point presentation of the book with a focus on the following points:

- Describe the author of this book in terms of race, gender, age and educational level.
- Describe the disability; what type of disability is portrayed, time of onset and environmental resources available to the individual.
- Describe the individual's response to their disability using concepts from Smart's book about stage theory or cognitive restructuring.
- Is the disability part of the person's identity? Give examples to defend your answer.
- How did this book influence your thinking about disabilities in general and specifically about this category of disability?

Your grade will be dependent on the group effort in addressing the questions as evidenced by the information provided in the power point presentation.

Quizzes (80 points) There will be a total of 4 quizzes throughout the semester worth 20 points each. Quizzes will cover at least 2 modules worth of information, will be multiple choice and true/false and will be equally spaced across the semester

Timeline for Assessment:

| <i>Assignment</i> | <i>Due</i> | <i>Points</i> |
|-----------------------------|--------------|---------------|
| <i>Weekly Participation</i> | | 65 |
| <i>Discussion Questions</i> | | 130 |
| <i>Video Critique</i> | | 25 |
| <i>Book Jigsaw</i> | | 50 |
| <i>Quizzes</i> | | 80 |
| | TOTAL | 350 |

Grading System:

You will receive a grade based on accumulated points accrued on assignments as a percentage of the total points possible for the course. The grading scale is as follows:

- 90 – 100% = A
- 80 – 89% = B
- 70 – 79% = C
- 60 – 69% = D
- Below 60% = F

Course Policies:

Assignments

- All assignments should be proof read for spelling and grammatical errors prior to being submitted.

- All assignments should reflect appropriate use of language throughout; avoidance of “handicapisms” or “ableisms” should be clearly evident.
- Assignments submitted as a requirement for another course should not be submitted for this class.
- All assignments should reflect independent effort. Although students are encouraged to use all resources possible to complete their assignments, plagiarism will not be tolerated (see Academic Dishonesty in Course Policies). Any evidence of plagiarism will result in a grade of ‘0’ on the assignment in question. For more information on plagiarism, see the “What is Plagiarism?” page from Georgetown University (<http://gervaseprograms.georgetown.edu/hc/plagiarism.html>).
- To be eligible for full credit assignments must be turned in by the due date noted on the course outline. Late assignments will be eligible for only ½ credit.

Retests/Makeup tests

Should a student need to take a quiz outside of the scheduled date the student must contact the instructor before the scheduled exam date. Alternate exam dates/times will only be granted where there is an unavoidable emergency such as serious illness, death in the family, or the like. All quizzes must be made up within one week of the original date.

Attendance/Participation

Students are expected to attend class and actively participate. Participation in this course is reflected in the weekly discussion participation and responses to classmates’ discussion points. All discussion question responses must be submitted by the date assigned for full credit.

Participation must also meet requirements of the Classroom Management Policy. It is expected that you will be respectful during the discussions of all class members.

Academic Dishonesty

All work submitted must be original work. If a student is guilty of academic dishonesty, NAU policy (in the Student Handbook) will be applied, resulting in automatic failure of this course.

E-Mail

I will use the NAU email system to communicate with you. Please read your email on a regular basis, so that all communication is timely.

Classroom Management Statement

Membership in the academic community places a special obligation on all members to preserve an atmosphere conducive to a safe and positive learning environment. Part of that obligation implies the responsibility of each member of the NAU community to maintain an environment in which the behavior of any individual is not disruptive.

It is the responsibility of each student to behave in a manner which does not interrupt or disrupt the delivery of education by faculty members or receipt of education by students, within or outside the classroom. The determination of whether such interruption or disruption has occurred has to be made by the faculty member at the time the behavior occurs. It becomes the responsibility of the individual faculty member to maintain and enforce the standards of behavior acceptable to preserving an atmosphere for teaching and learning in accordance with University regulations and the course syllabus.

At a minimum, students will be warned if their behavior is evaluated by the faculty member as disruptive. Serious disruptions, as determined by the faculty member, may result in immediate removal of the student from the instructional environment.

Significant and/or continued violations may result in an administrative withdrawal from the class. Additional responses by the faculty member to disruptive behavior may include a range of actions from discussing the disruptive behavior with the student to referral to the appropriate academic unit and/or the Office of Student Life for administrative review, with a view to implement corrective action up to and including suspension or expulsion.

University Policies:

For further information please visit:

<http://jan.ucc.nau.edu/academicadmin/policy1.html>

Safe Environment Policy

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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 (928-523-5181), the academic ombudsperson (928-523-9368), or NAU's Office of Affirmative Action (928-523-3312).

Students with Disabilities

If you have a documented disability, you can arrange for accommodations by contacting the office of Disability Resources (DR) at 928-523-8773 (voice), 928-523-6906 (TTY). In order for your individual needs to be met, you are required to provide DR with disability related documentation and are encouraged to provide it at least eight weeks prior to the time you wish to receive accommodations. You must register with DR each semester you are enrolled at NAU and wish to use accommodations.

Faculty are not authorized to provide a student with disability related accommodations without prior approval from DR. Students who have registered with DR are encouraged to notify their instructors a minimum of two weeks in advance to ensure accommodations. Otherwise, the provision of accommodations may be delayed.

Concerns or questions regarding disability related accommodations can be brought to the attention of DR or 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 928-523-4889.

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.

Academic Contact Hour Policy

The Arizona Board of Regents Academic Contact Hour Policy (ABOR Handbook, 2-206, Academic Credit) states: "an hour of work is the equivalent of 50 minutes of class time...at least 15 contact hours of recitation, lecture, discussion, testing or evaluation, seminar, or colloquium as well as a minimum of 30 hours of student homework is required for each unit of credit."

The reasonable interpretation of this policy is that for every credit hour, a student should expect, on average, to do a minimum of two additional hours of work per week; e.g., preparation, homework, studying.

For a three credit course, this suggests six hours of work outside of class per week.

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.

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

3. College SBS 4. Academic Unit /Department POS

5. Course subject/catalog number 347 6. Units/Credit Hours 3

7. Long course title Environmental Politics of the Colorado Plateau
(max 100 characters including spaces)

8. Short course title (max. 30 characters including spaces) Enviro Politics Col Plateau

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

This course will introduce students to some of the major environmental politics issues of the Colorado Plateau region, including water, forests, fire, restoration, development, tourism, and sacred sites.

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) Enrollment in Grand Canyon Semester.

15. Corequisites (must be completed *with* proposed course) _____

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.

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 no
If yes, does it require listing in the Course Equivalency Guide?
Please list, if known, the institution and subject/catalog number of the course _____

18. Names of current faculty qualified to teach this course: Schlosberg, Vaughn, Poirier

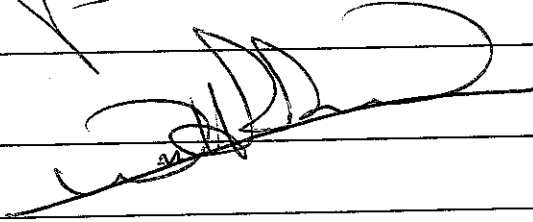
19. Justification for new course, including unique features if applicable. (Attach proposed syllabus in the approved university format).

This course has been offered as a topics course for Grand Canyon Semester students in two previous semesters. In order to allow for easier transfer of credits for non-NAU students, and to allow for the course to count in the Southwest Environment focus area of the Environmental Studies major, it needs to be converted into a regular course.

For Official AIO Use Only:
Component Type
Consent
Topics Course

35. Approvals

 _____
Department Chair (if appropriate) 10/22/08
Date

 _____
Chair of college curriculum committee 11/4/08
Date

Dean of college

For Committees use only

 _____
For University Curriculum Committee 12/2/08
Date

Action taken: Approved as submitted

 Approved as modified

College of Social and Behavioral Science
Department of Politics and International Affairs

POS 347: ENVIRONMENTAL POLITICS OF THE COLORADO PLATEAU

Grand Canyon Semester: Fall Semesters

3 Credit Hours

Professor David Schlosberg

Office: SBS 235

Phone: 523-0339 -- E-mail: david.schlosberg@nau.edu

Course Prerequisite: Enrollment in Grand Canyon Semester

The Colorado Plateau is rich in terms of diverse human cultures and amazing places, environments, and natural resources. It is also rich in conflicts among cultures and between those cultures and the natural world. This course will attempt to introduce students to some of the major environmental politics issues of the region, including water, forests, fire, restoration, development, tourism, and sites sacred to the indigenous populations. While the focus will be on the political development of many of these issues, we will necessarily be dealing with history, clashing worldviews, and the use of environmental science in coming to understand the nature of the policy issues at hand.

The course will be innovatively structured. Students will be expected to complete readings – most on electronic reserve – before a public lecture on Tuesday evenings. A seminar will follow the next morning, where we can all continue discussions of the week's topic and make links to other courses, experiences, or issues of interest during the Grand Canyon Semester. Attendance is required at ALL public talks and class seminars.

STUDENT LEARNING EXPECTATIONS/OUTCOMES FOR THIS COURSE

- Students will demonstrate a knowledge of environmental issues and conflicts on the Colorado Plateau.
- Students will illustrate their ability to explain environmental issues from a variety of viewpoints, knowledges, and cultures on the Plateau.
- Students will be prepared to apply knowledge and perspectives learned from environmental issues on the Plateau to other environmental problems.

REQUIRED READINGS

There are two required books for the course, which you should read as soon as you are enrolled in Grand Canyon Semester:

Charles Wilkinson, *Crossing the Next Meridian*

Charles Wilkinson, *Fire on the Plateau*

Also, keep up on environmental issues on the Plateau by reading the local paper the *Daily Sun* (online at www.azdailysun.com/news/) and the regional environmental paper, the *High Country News* (also online at www.hcn.org/)

Most additional readings will be available through electronic reserves on the class Vista page.

FORMAT

FORMAT

This class will be a seminar format, and students will be responsible for helping to lead the group discussion each week. *It is absolutely essential that you come to class having read, and ready to engage, the material.* Reflection pieces on the readings for each section will be required; note your questions, confusions, and concerns in these pieces and raise them in class. We will be making connections between the weekly topic and your various travels, studies, and individual research projects. Seminars will be supplemented with evening guest lectures; topics and additional readings will be announced.

COURSE REQUIREMENTS

Thought-pieces

Thought-pieces will be required for each of the class sections. These should be no longer than two pages, be in essay format, and include your responses to and reflections on the readings. What did you like? What bothered you? What couldn't you understand? Thought-pieces are due in the weekly seminar, and we will attempt to integrate your reflections and questions into our discussions. There are SEVEN thought pieces due throughout the term, beginning with the second Topic.

Seminar Facilitation

Students will work in teams to facilitate the discussion of the weekly seminar. You will prepare an overview of the readings for the week and offer a set of discussion questions.

Research Papers

You are to pick two of the topics in the lecture/discussion series and write a 5-7 page paper analyzing the issue from environmental, scientific, cultural, and most importantly political grounds. Links to the approaches of other courses in the GCS are welcome. Further guidelines will be forthcoming. Due Monday November 29.

The point breakdown:

| | |
|--|-----------|
| 2 research papers: | 50 |
| 7 2-page thought-pieces @ 5 pts. each: | 35 |
| <u>Seminar Facilitation and Class Participation:</u> | <u>15</u> |
| Total points available: | 100 |

Assume that I will assign final grades based on a standard percentage scale: 90-100 = A; 80-89 = B; 70-79 = C; 60-69 = D; below 60 = F.

COURSE OUTLINE: Dates and Topics

[All topics and readings subject to change. Additional evening lectures will be announced during the term, and attendance is required.]

Topic 1: Intro: Environmental Politics and Land Management on the Colorado Plateau

Readings:

Crossing the Next Meridian, by Charles Wilkinson – Chaps. 1, 2, 3

Also, start reading the papers noted above, the *Daily Sun* and *High Country News* (both available online).

Topic 2: Water

Video: *Cadillac Desert: An American Nile*

Readings:

John Wesley Powell, *Report on the Arid Regions of the United States*

Wilkinson, *Crossing the Next Meridian*, Chapter 6

Mark Reisner, *Cadillac Desert: American Nile*

Wendy Espeland, *The Struggle for Water*, excerpts

Topic 3: Forests, Fires, and Restoration

Readings:

R. Bruce Hull and David P. Robertson, "The Language of Nature Matters: We Need a More Public Ecology"

Andrew Light and Eric S. Higgs, "The Politics of Ecological Restoration"

W. Wallace Covington, et al., "Restoring Ecosystem Health in Ponderosa Pine Forests of the Southwest"

Jacqueline Vaughn and Hanna Cortner, *George W. Bush's Healthy Forests*, excerpts

Websites:

Ecological Restoration Institute: www.eri.nau.edu/

ForestERA: jan.ucc.nau.edu/~fera-p/index.htm

Topic 4: The Colorado River and the Politics of Recreation

Monday October 11

Readings:

National Park Service Draft Management Plan

Further readings TBA

Topic 5: The Colorado Plateau's Nuclear Legacy

Readings:

Michael Amundson. Chapters 1-4 from *Yellowcake Towns: Uranium Mining Communities in the American West*. Boulder: University Press of Colorado.

Valerie Kuletz, Chapter 1 from *The Tainted Desert: Environmental and Social Ruin in the American West*. NY: Routledge

Grinde and Johnson, "The High Cost of Uranium," from *Ecocide of Native America*.

Topic 6: Indigenous Issues: Sacred Sites, Environmental Justice, and Land Management

Readings:

Ward Churchill, "Genocide in Arizona," from *Struggle for the Land*

Charles Wilkinson, "Kykotsmovi," "Black Mesa," and "Kachina" from *Fire on the Plateau*

Winona Laduke, "Native Sun," from *All My Relations*

David Schlosberg, "Native American Environmental Justice"

Ninth Circuit Court rulings on the Snowbowl case

Also read websites of
BlackMesaTrust.org
SaveThePeaks.org
dinecare.indigenousnative.org

Topic 8: Food Politics on the Plateau

Readings:

Gary Nabhan, *Coming Home to Eat*
Gary Nabhan, "How Green is our Valley?"
Michael Pollen, *The Omnivore's Dilemma*

Topic 8: Growth, Sprawl, and New Urbanism

Readings:

Hal Rothman, *Devil's Bargain*, excerpts
Christopher Leinberger, *The Option of Urbanism*, excerpts
William Travis, *New Geographies of the American West*, excerpts

Topic 9: Environmental Movements in the Southwest

Readings: Read through the websites of various movement groups around the Plateau:

www.flagstaffactivist.org/
www.swfa.org/
arizona.sierraclub.org/plateau
friendsofflagstaff.org
grandcanyontrust.org/
www.biologicaldiversity.org/swcbd/
www.fguardians.org/
www.livingrivers.org/staff.cfm
www.suwa.org/

Northern Arizona University
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 or from the NAU's Affirmative Action website <http://home.nau.edu/diversity/>. If you have concerns about this policy, it is important that you contact the departmental chair, dean's office, the Office of Student Life (928-523-5181), or NAU's Office of Affirmative Action (928-523-3312).

Students with Disabilities

If you have a documented disability, you can arrange for accommodations by contacting Disability Resources (DR) at 523-8773 (voice) or 523-6906 (TTY), dr@nau.edu (e-mail) or 928-523-8747 (fax). Students needing academic accommodations are required to register with DR and provide required disability related documentation. Although you may request an accommodation at any time, in order for DR to best meet your individual needs, you are urged to register and submit necessary documentation (www.nau.edu/dr) 8 weeks prior to the time you wish to receive accommodations. DR is strongly committed to the needs of student with disabilities and the promotion of Universal Design. Concerns or questions related to the accessibility of programs and facilities at NAU may be brought to the attention of DR or the Office of Affirmative Action and Equal Opportunity (523-3312).

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 monthly. 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 or on their website: <http://www.research.nau.edu/vpr/IRB/index.htm>. If you have questions, contact the IRB Coordinator in the Office of the Vice President for Research at 928-523-8288 or 523-4340.

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 G of NAU's Student Handbook <http://www4.nau.edu/stulife/handbookdishonesty.htm>.

Academic Contact Hour Policy

The Arizona Board of Regents Academic Contact Hour Policy (ABOR Handbook, 2-206, Academic Credit) states: "an hour of work is the equivalent of 50 minutes of class time...at least 15 contact hours of recitation, lecture, discussion, testing or evaluation, seminar, or colloquium as well as a minimum of 30 hours of student homework is required for each unit of credit."

The reasonable interpretation of this policy is that for every credit hour, a student should expect, on average, to do a minimum of two additional hours of work per week; e.g., preparation, homework, studying.

SENSITIVE COURSE MATERIALS

If an instructor believes it is appropriate, the syllabus should communicate to students that some course content may be considered sensitive by some students.

"University education aims to expand student understanding and awareness. Thus, it necessarily involves engagement with a wide range of information, ideas, and creative representations. In the course of college studies, students can expect to encounter—and critically appraise—materials that may differ from and perhaps challenge familiar understandings, ideas, and beliefs. Students are encouraged to discuss these matters with faculty."

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 no
Please list, if known, the institution and subject/catalog number of the course YCC PSY 132

18. Names of current faculty qualified to teach this course: Demir, Walters, Gardner

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

We are proposing this course as suggested by the APA Learning Outcomes guidelines of the importance of diversity and cross-cultural issues in psychology. Although several Psychology courses address cultural issues, we do not currently have any courses that primarily focus on diversity.

For Official AIO Use Only:

Component Type

Consent

Topics Course

29. Explain by what method(s) Student Learning Outcomes will be assessed in ALL topic syllabi offered under this course number. _____

NEW JUNIOR LEVEL WRITING COURSE (refer to question 19)

30. To which degree programs offered by your department/academic unit does this proposal apply? _____

31. Do you intend to offer ABC 300 and ABC 300W? yes no
If no, please submit a course delete form for the ABC 300.

GO TO question 35

NEW SENIOR CAPSTONE COURSE (refer to question 19)

32. To which degree programs offered by your department/academic unit does this proposal apply? _____

33. Does this proposal replace or modify an existing course or experience? yes no
If yes, which course(s)? _____

34. Do you intend to offer ABC 400 and ABC 400C? yes no
If no, please submit a course delete form for the ABC 400.

35. Approvals

| | |
|---|------------------------|
| <u>K. L. - Danks</u> Department Chair (if appropriate) | <u>9-9-05</u> Date |
| <u>[Signature]</u> Chair of college curriculum committee | <u>9-28-08</u> Date |
| _____ Dean of college | _____ Date |

For Committees use only

| | |
|---|---|
| For Liberal Studies Committee | Date |
| Action taken: _____ modified _____ | Approved as submitted _____ Approved as modified _____ |
| <u>[Signature]</u> For University Curriculum Committee | <u>12-2-08</u> Date |

Action taken: _____ Approved as submitted _____
Approved as modified ✓

College of Social and Behavioral Sciences- Department of Psychology
Psychology 280: Cross-Cultural Psychology
Section: --, ——

Instructor: Meliksah Demir
Office: SBS 219
Office Phone:(928) 523-0407
Email: md355@nau.edu

Meeting time: TBA
Office hours: TBA
Location: TBA
Credit Hours: 3

Course prerequisites: PSY 101 or International Student Group SPW.

Course description and Purpose: This course is an introduction to culture's influence on human behavior and mental processes. Beginning with an examination of theoretical definitions of culture and cross-cultural methodology, the course covers a broad range of theories and research findings regarding cultural influences on human behavior and cognitive processes (life-span development, abnormal behavior and mental health, self-concept, emotion, motivation, learning, intelligence, perception, memory, communication, social cognition, and social behavior). The diversity of human expression is examined in contexts ranging from everyday modes of functioning to family and close relationships. By providing students with a non-judgmental understanding of how culture influences human behavior, this course will make students more equipped to interact in a world where there is increasing contact between different cultures.

This course supports the mission and principles of the Liberal Studies Program by helping students to understand how individuals in other cultures think, feel, relate to others, behave and to understand the forces, beliefs and motivations that underlie their behavior. Especially in the last two decades, cross-cultural research in psychology has demonstrated that many psychological phenomena are actually quite culture-bound. Therefore, the field of psychology has an obligation to train students to be sensitive to the ways in which cultural norms and values shape our understanding of ourselves, and the world around us. Accordingly, present course aims to help students to develop an understanding of how to theoretically, methodologically and empirically approach the study of culture, and further, to develop an appreciation for the diversity of cultures and how culture influences behavior.

PSY 280 is in the Social and Political Worlds block and supports the intent of the block by:

Engaging students in the study of the most recent/important theoretical and research developments in cross-cultural psychology

Helping student to better understand the relationship between sociocultural context and psychological processes.

Helping students learn how different theoretical, methodological and empirical approaches are employed to understand the influence of culture on human behavior

Liberal Studies Essential Skills

The reading and writing requirements for this course will foster the critical thinking skills of the students. The assignments listed below will help students to critically evaluate empirical research from a cross-cultural perspective and understand non-native's personal experiences in the USA. Through these assignments, students will acquire essential critical skills for success beyond graduation

Student Learning Expectations:

- Students will examine the field of cultural psychology and the concepts and processes necessary for cross-cultural research.
- Students will describe culturally sensitive research methodology.
- Students will describe the impact of cross-cultural studies on the development of psychology as a discipline.

- Students will examine the most recent/important theoretical and research developments in cross-cultural psychology during the past thirty years.
- Students will develop an appreciation for the diversity of cultures and how culture influences behavior.
- Students will describe the dynamics of cross-cultural experiences.
- Students will describe their own cultural backgrounds and the ways that cultural perspectives relate to their lives, educational, and career plans.
- Students will improve their analytical and writing skills.

Required Textbooks:

Shirae, E. & Levy, D. (2007). *Cross-Cultural Psychology: Critical Thinking and Contemporary Applications*. (3rd ed.). Boston, MA: Allyn & Bacon
 Segall, M.H., Dasen, P.R., Berry J.W., & Poortinga, Y.H. (1999). *Human behavior in global perspective* (2nd Ed.). Boston, MA: Allyn & Bacon.

Required Readings: There are several important papers published in the last two decades on issues relevant to cross-cultural psychology. These papers offer new and unique perspectives and will help the student to follow the most recent empirical and theoretical advances in the field. These papers (see the attached list) will be available on Vista.

Information about Vista: This course will actively use Vista (vista.nau.edu). Lecture notes, assignments, announcements, etc. will be posted on the web page of this course. Make sure that you know your N.A.U. access ID and password.

Assessment of Student Learning Outcomes:

Exams: There will be three exams in this course. Each exam will be worth 180 points, will cover several chapters, assigned readings and other topics as discussed in the class. There will be 60 multiple-choice and 2 essay questions in each exam. The exams are NOT cumulative. Material will be presented in the lecture that is not covered in the textbook (such as recent advances in theory and research; recent and/or major publications); therefore, it is highly recommended that you attend class. You are responsible for all material presented in the lecture and assigned readings.

Failure to be present for the exam without a documented University excuse will result in a ZERO for the exam. Make-up exams will only be given for University-approved excuses. If you miss an exam attributable to university-sponsored events (e.g., off campus curricular or sporting events), exams need to be taken before the student leaves campus. In this case, the exam would be multiple choice questions (as long as the student provides the appropriate documentation). For all other cases, the MAKE-UP EXAMS WILL HAVE 8 ESSAY QUESTIONS. You must contact me before the exam you will miss. If the instructor approves your make-up request, you will have to take the test **during the scheduled next office hour**, in the hall outside the instructor's office. If you miss the make-up exam, you will receive zero (0) for the exam. This policy will be strictly enforced.

Please note that the final exam is scheduled during the Final Examination Period as assigned by the University Registrar; as per University policy, the exam date and time are non-negotiable. Thus, **in the case of the final exam, I cannot give make-ups beyond the last day of the semester.**

Students with disabilities: If you have a documented disability and wish to discuss academic accommodations with me, please contact me within the first couple of weeks of the semester.

Paper Assignments: There would be two paper assignments in this course. Detailed information about them is provided below. Please note that these assignments should be in APA format. See the following link for information about APA format

(<http://www.lib.usm.edu/legacy/tutorials/apatutorial/tutorialindex.html>). Additional information about the format can be found by visiting the NAU library's web page.

Assignment #1: Intercultural Interview

The aim of this assignment is to help you get familiar with cultural differences in your environment. You are expected to conduct a brief interview with an international student at Northern Arizona University who is native to a culture different than your own (excluding Canada and USA). The interview should focus on the respondent's subjective experience of being in America, psychologically important

differences between the home and host societies, problems encountered by the person in adjustment, adaptation to American society, acceptance by others, etc. You are expected to write a short description of your findings (no more than 5 pages). It is essential that you relate your findings to the concepts covered in class/lectures/readings. The Gabrenya (1998) article provides details and suggestions regarding the interview (you are expected to read the paper before you conduct your interview). This assignment would be 100 points and is due October 14, 2009. You should e-mail your paper to your instructor.

Assignment #2: Review of a peer-reviewed article

The aim of this assignment is to help you get familiar with cross-cultural research. You are expected to choose one article (that interests you) that reports data from United States and another country. You are expected to choose articles published since 2003. The article could be from any journal that publishes cross-cultural studies (ex: International Journal of Behavioral Development, Journal of Cross-Cultural Psychology; Developmental Psychology). You can find all of the specified journals (online access) at our library (http://www.nau.edu/library/research_journals.html).

First Step: The article you choose has to be approved by your instructor. The last day for approval is October 21, 2009. There are two ways to ask for approval: a) before or after class; and b) by using the office hours. Papers submitted without the approval of the instructor would not be graded. I strongly suggest that you do find an article early in the semester for approval.

Second Step: After reading the article (a few times), you are expected to write a review of the article (4-5 pages). The paper would be in APA format and should be organized according to the following questions: (150 points)

- 1) What was the author's purpose for conducting the study (rational)? (10 points)
- 2) Summarize the methods used to test the hypotheses. (30 points)
 - How are the variables operationalized?
 - What method is used (e.g. experimental, quasi-experimental, correlational, etc).
 - Who were the participants? How generalizable are these data to other persons?
 - Did the researchers employ good cross-cultural methodology (e.g., translation and back translation, etc.)? If measures or paper-and-pencil instruments were used, were they appropriate for the samples? How was equivalence of the measures or treatments determined?
- 3) What were the major findings of the study? (Attention to cross-cultural differences). I do not want you copy-paste the results! You are to discuss the important findings of the study in your own words. How did the author(s) summarize the findings of the study. Did the findings turn out as expected? Why or why not? Were there any surprising findings? (40 points).
- 4) What did the author(s) conclude from the study? Again, in your own words. (20 points)
- 5) How do the findings of the study relate (or not) to the material discussed in class or in our book? (30 points)
- 6) What is the significance of this study?
 - How does it add to your own personal understanding? (15 points)
 - What does it contribute to our understanding of cross-cultural psychology? (15 points)

This assignment would be 150 points and is due December 2, 2009. You should e-mail your paper to your instructor.

Late Paper Assignments: Papers not submitted by 5 pm on due dates are, by definition, late. The following policy will be followed for late papers: All late papers will be reduced by 10 points. After three days, the paper will not be accepted, and a grade of zero will be recorded for the paper. In order to prevent late submissions and technological difficulties, I strongly suggest that you start working on your paper earlier and save your work! **BACK UP YOUR WRITING** and do not wait until the last minute to complete your writing assignments! "My computer crashed" or "I lost my flash drive" are not acceptable excuses for a late assignment.

E-mailing your assignments: Assignments in this course are to be e-mailed to your instructor. In doing so, please make sure your e-mail has a subject line (e.g., PSY223 ASSIGNMENT #1) and include your name and student ID in the e-mail.

Grading:

| Assessment | Points | Points and corresponding grades | |
|-------------------------|------------|---------------------------------|-----------------|
| | | Grade | Points Required |
| Exams (3) | 540 | A | 700 and higher |
| Intercultural Interview | 100 | B | 600-699 |
| Empirical Paper Review | 150 | C | 500-599 |
| Plagiarism Training | 10 | D | 400-499 |
| TOTAL | 800 | F | Below 399 |

Academic Dishonesty

Acts of academic dishonesty include but are not limited to the following:

Cheating- unauthorized copying or collaboration on a test or assignment, or the use or attempted use of unauthorized materials; Tampering-altering or interfering with evaluation instruments and documents; Fabrication- falsifying experimental data or results, inventing research or laboratory data or results for work not done, or falsely claiming sources not used; Plagiarism- representing someone else's words, ideas, artistry, data as one's own, including copying another person's work (including published and unpublished material, and material from the internet) without appropriate referencing, presenting someone else's opinions and theories as one's own, or work jointly on a project, then submitting it as one's own; Assisting- assisting another student in an act of academic dishonesty, such as taking a test or doing an assignment for someone else, changing someone's grades or academic records, or inappropriately distributing exams to other students. If you are found to have engaged in academic dishonesty, you will fail the assignment. You will also be reported to school administrators. They will take additional actions that may include removal from my class, receiving a failing grade for the term and/or removal from school.

As for plagiarism, you are expected to take the online training (post-test) (<http://www.lib.usm.edu/legacy/plag/plagiarismtutorial.php>). Once you complete the tutorial, you will take a test. You are required to print this post-test result and submit it to your instructor in the first two weeks of the semester. This would be worth 10 points.

For other N.A.U policies, visit <http://jan.ucc.nau.edu/academicadmin/plcystmt.html>

Expectations:

Attendance: I expect you to attend every class. This is important for several reasons. Most importantly, material will be presented in lectures that are not covered in the textbook (such as recent advances in theory and research). Therefore, it is highly recommended that you attend class. You are responsible for all material presented in the lecture and assigned readings.

Class Participation: Active participation of students is expected through out the semester. It is important to me that you learn to think about and express yourselves effectively regarding the principles and issues covered in this course. Thoughtful comments and questions will greatly add to the classroom experience.

Classroom Behavior: In order for class to run smoothly and efficiently, you are expected to be **on time** for class. Ensure that you are organized and well prepared before we begin. I expect students to pack up their materials only after I indicate that the class is over. Eating, reading, sleeping, and the like are not allowed in class. Make sure you turn cell phones off and put them away during class. In case of emergencies, please let the instructor know about this before class and sit close to the door. Every time we hear a cell phone ringing during class, ten (10) points would be deducted from the final grade. Also, if

you are going to bring your laptop to class, you have to seat in the front. You will be asked to leave the classroom and lose ten (10) points if you surf the internet during class. This policy will be strictly enforced.

Extra Credit: You can earn up to 20 points of extra credit in this class by research participation. You will receive 4 points for each hour you participate in a study conducted by the Department of Psychology. The department switched to Sona Systems for research participation (where you set-up appointments online). Please visit <http://nau.sona-systems.com> to make appointments. If you did not use SONA before, please contact your instructor during the semester.

COURSE SCHEDULE AND TOPICS: This is a tentative schedule, which might change. You are responsible for making yourself aware of any changes that may occur in the schedule. The best way to be aware of changes is to attend class.

| Week | Topic | Chapter |
|--------------------|--|--|
| 1 | Understanding Cross-Cultural Psychology | Shiraev & Levy (2007)-1, Segall et all. (1999)-1 |
| 1 | Methodology of Cross-Cultural Research | S & L 2; Segall 2 |
| 2 | Critical Thinking in Cross-Cultural Psychology | S & L 3; |
| 2 | Cognition: Sensation and Perception, and States of Consciousness | S & L 4; Segall 4 |
| 3 | Intelligence | S & L 5; |
| First Exam | | |
| 4 | Emotion Happiness Across Cultures | S & L 6; Additional Readings |
| 5 | Motivation and Behavior | S & L 7; Segall 7 Additional Readings |
| 6 | Human Development and Socialization | S & L 8; Segall 3 Additional Readings |
| 7 | Psychological Disorders | S & L 9; |
| Second Exam | | |
| 8 | Social Perception and Social Cognition | S & L 10 Additional Readings |
| 9 | Social Interaction | S & L 11; Segall 10 |
| 10 | Applied Cross-Cultural Psychology: Some Highlights | S & L 12; Segall 12 |
| 11 | Sex And Gender Across Cultures Mate Selection | Segall 8 Additional Readings |
| 12 | Close Relationships Family And Romantic Relationships | Segall 10 Additional Readings |
| 13 | Third Exam | |

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

| | | | |
|-----------------------------|--------------------------------------|--|---|
| 1. College | Social & Behavioral Sciences | 2. Academic Unit/Department | Economics |
| 3. Academic Plan Name | B S Economics (Extended major) | 4. Subplan (if applicable)? | |
| 5. Effective Date | FALL 2008 | | |
| 6. Is this proposal for a : | <input type="checkbox"/> New Plan | <input checked="" type="checkbox"/> Plan Change* | <input type="checkbox"/> Plan Deletion |
| | <input type="checkbox"/> New Subplan | <input type="checkbox"/> Subplan Change | <input type="checkbox"/> Subplan Deletion |

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

| | |
|---|---|
| <p>7. For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the <i>current</i> on line academic catalog: http://www4.nau.edu/aio/AcademicCatalog/academiccatalogs.htm <i>Be sure you include all catalog text that pertains to this plan change</i></p> <p>Economics Component</p> <ul style="list-style-type: none"> • You choose 15 units from ECO 321, 325, 356, 420, 425, 445, 446, 464, 473, 480, 483, 484, 486, and 497 <p>Please note that you can't count a course that is listed both here and in an emphasis area for both requirements.</p> | <p>Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing and strikethrough what is being deleted. <i>(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.)</i></p> <p>Economics Component</p> <ul style="list-style-type: none"> • You choose 15 units from ECO 321, 325, 328, 356, 420, 425, 445, 446, 464, 473, 480, 483, 484, 486, and 497 <p>Please note that you can't count a course that is listed both here and in an emphasis area for both requirements.</p> |
|---|---|

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.
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.
- 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

Student will:

- Apply the principle of opportunity cost to the decision-making process
- Apply the principle of marginal analysis to the decision-making process
- Apply supply and demand analysis to the decision-making process
- Interpret the sources and impacts of macroeconomic fluctuations
- Analyze the application of various monetary and fiscal policies to economic problems.

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

This change to the plan reflects the addition of one new course in Energy Economics. The course content is in line with NAU sustainable environment initiatives as is relevant to current issues with respect to resource use and resource policy in today's economy.

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

be satisfied?

None

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.

None

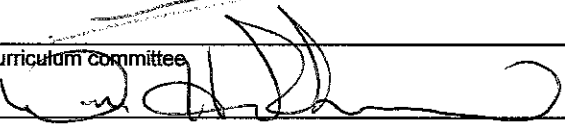
14. Will present library holdings support this academic plan/subplan?

Yes

Certifications

 11-14-08

Department Chair/ Unit Head (if appropriate) Date

 11-14-08

Chair of college curriculum committee Date

 11-14-08

Dean of college Date

For committee use only
 12/2/08

For University Curriculum Committee Date

Action taken: approved as submitted approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

| | | |
|--|---|---|
| 1. College <u>CEFNS</u> | 2. Academic Unit/Department <u>CM</u> | |
| 3. Academic Plan Name <u>Construction Management</u> | 4. Subplan (if applicable)? _____ | |
| 5. Effective Date <u>FALL 2009</u> | | |
| 6. Is this proposal for a : | | |
| <input type="checkbox"/> New Plan | <input checked="" type="checkbox"/> Plan Change | <input type="checkbox"/> Plan Deletion |
| <input type="checkbox"/> New Subplan | <input type="checkbox"/> Subplan Change | <input type="checkbox"/> Subplan Deletion |

| | |
|--|---|
| <p>7. For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the current on line academic catalog: (http://www4.nau.edu/aiol/AcademicCatalog/academiccatalogs.htm) <i>Be sure you include all catalog text that pertains to this plan change</i></p> <p><i>For New Plans, leave this column blank.</i></p> <p>PREPROFESSIONAL REQUIREMENTS</p> <p>These 20 units provide you with a foundation for study in construction management:</p> <ul style="list-style-type: none"> • MAT 125 (4 units) • PHY 111 and 111L (4 units) • CM 120, 123, 124, and 130 (12 units) <p>PROFESSIONAL REQUIREMENTS</p> <p>You take at least the following 71 units:</p> <ul style="list-style-type: none"> • CM 220, 222, 224, and 225 (12 units) • CM 253 or CENE 270 (3 units) • CM 331, 326, 329, 341, 360, 388, and 491 (21 units) • CM 401, 481 and 489 (7 units) • PHY 112 and 112L (4 units) • GLG 100 and 100L (4 units) • STA 270 (3 units) | <p>Show the proposed changes in this column. Please BOLD the changes, to differentiate from what is not changing and strikethrough what is being deleted. <i>(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.)</i></p> <p>PREPROFESSIONAL REQUIREMENTS</p> <p>These 20 units provide you with a foundation for study in construction management:</p> <ul style="list-style-type: none"> • MAT 125 or higher (4 units) • PHY 111 and 111L OR PHY 161/ and 161/L (4 units) • CM 120, 123, 124, and 130 (12 units) <p>PROFESSIONAL REQUIREMENTS</p> <p>You take at least the following 70-71 units:</p> <ul style="list-style-type: none"> • CM 220, 222, 224, and 225 (12 units) • CM 253 or CENE 270 (3 units) • CM 331, 326, 329, 341, 360, 388, and 491 (21 units) • CM 401, 481 and 489 (7 units) • PHY 112 and 112L (4 units) <u>OR PHY 262 (3 units)</u> • 4 Additional Hours of Lab Science (Geology recommended) • STA 270 (3 units) <u>Or CENE 225</u> |
|--|---|

8. 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.

9. For undergraduate plans, will a milestone** be used to:
- a. verify satisfactory completion of a non course requirement.
 - 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

Upon completion of this program, students will have acquired the basic skills and knowledge for an entry level position of management and leadership in the construction industry. These basic skills and knowledge include:

- A mastery of oral and written communication skills
- A mastery of basic engineering and construction technical knowledge including an understanding of:
 - Engineering concepts
 - Management concepts
 - Construction materials, methods, and plan reading
 - Bidding and estimating
 - Construction budgeting, costs, and cost controls
 - Construction planning, scheduling, and control
 - Construction safety
 - Surveying and project layout
 - Construction project administration
- The ability to behave in an ethical manner

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

Requested by CEFNS deans office to reduce internal transfer paper transactions for engineering students changing to CM as major.


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

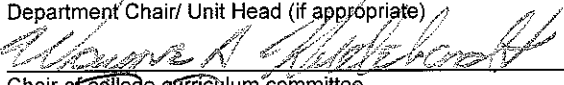
13. Will this academic plan/subplan affect other majors, liberal studies course offerings, plans/subplans, curricula, or enrollment at NAU?


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

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

Certifications

 9/8/2008

Department Chair/ Unit Head (if appropriate) Date
 Nov 4, 2008

Chair of college curriculum committee Date
 12-2-08

Dean of college Date

For committee use only

 12/2/08

For University Curriculum Committee Date

Action taken: approved as submitted approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.



| Freshman Year | | | | | |
|----------------------|---|---|-------------------------|--|---|
| 1 st term | | | 2 nd term | | |
| CM 120 | Intro to Building the Human Environment | 3 | CM 124 | Construction Methods II | 3 |
| CM 123 | Construction Methods I | 3 | PHY 111 or PHY 161 | General Physics I or University Physics I (SCI: LAB) | 3 |
| MAT 125 | Pre-Calculus (FNRQ) | 4 | PHY 111L or PHY 161L | General Physics I Lab or University Physics I Lab (SCI: LAB) | 1 |
| ACC 205 | Legal Environment of Business | 3 | ENG 105 | Critical Reading and Writing (FNRQ) | 4 |
| <i>DIV</i> | Diversity | 3 | CM 130 | Computing in Construction | 3 |
| NAU 100 | Transition to College | 1 | SC 111 | Fundamentals of Public Speaking (SPW) | 3 |
| Total units | | | 17 | Total units | |
| | | | | 17 | |

| Sophomore Year | | | | | |
|-----------------------|--|-----|------------------------|--|---|
| 3 rd term | | | 4 th term | | |
| CM 222 | Construction Graphic | 3 | CM 220 | Introduction to Structural Design | 3 |
| CM 225 | Masonry Systems | 3 | CM 224 | Concrete Systems | 3 |
| ECO 284 | Microeconomics (SPW) | 3 | CM 253 or CENE 270 | Surveying & Building Layout or Plane Surveying | 3 |
| PHY 112 or PHY 262 | General Physics II or University Physics II (SCI: SAS) | 3 | ECO 285 | Macroeconomics (SPW) | 3 |
| PHY 112L | General Physics II Lab (PHY 262L not required) | 0-1 | STA 270 or CENE 225 | Statistics (SCI: SAS) or Engineering Analysis | 3 |
| ACC 255 | Financial Accounting | 3 | | | |
| Total units | | | 15-16 | Total units | |
| | | | | 15 | |

| Junior Year | | | | | |
|----------------------|-------------------------|---|----------------------|---------------------------------------|---|
| 5 th term | | | 6 th term | | |
| CM 326 | Mechanical Systems | 3 | CM 341 | Electrical Systems | 3 |
| CM 329 | Estimating & Bidding | 3 | JLWR | Junior Level Writing Requirement **** | 3 |
| CM 388 | Construction Scheduling | 3 | <i>BE</i> | Business Elective ** | 3 |
| CM 331 | Structural Steel System | 3 | <i>LS</i> | Liberal Studies (AHI) | 3 |
| CM 360 | Soils Mechanics | 3 | <i>LS/DIV</i> | Liberal Studies(AHI)/Diversity *** | 3 |
| Total units | | | 15 | Total units | |
| | | | | 15 | |

| Senior Year | | | | | |
|----------------------|-------------------------|---|----------------------|-----------------------------|---|
| 7 th term | | | 8 th term | | |
| CM 481 | Construction Operations | 3 | CM 401 | Ethics in Building | 1 |
| MGT 303 | Concepts of Management | 3 | CM 489 | Construction Administration | 3 |
| SE | Science elective + | 4 | CM 490C | Construction Integration | 3 |
| <i>BE</i> | Business Elective ** | 3 | CM 491 | Construction Safety | 3 |
| <i>LAN</i> | Modern Language (CU) * | 4 | <i>LAN</i> | Modern Language (CU) * | 4 |
| Total units | | | 17 | Total units | |
| | | | | 14 | |

Liberal Studies Distribution blocks

| | | | | |
|---------------|---------------|--------------|----------------------------|--------------------------------------|
| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 35 total |
| | ECO 284 (3) | LAN (4) | PHY 111/L or PHY 161/L (4) | |
| | ECO 285 (3) | LAN (4) | PHY 112 or PHY 262 (3) | SC 111 (3) |

PROGRAM INFORMATION

A minimum of 125 units are required for this degree.

You may have no more than two D's in your CM, engineering or computer science courses.

* 8 units of the same modern language are required. Spanish is recommended.

** Business electives include 6 units from: FIN 303, MKT 303, ACC 256 or other approved business courses.

*** Take a liberal studies course that also satisfies a diversity requirement.

**** Junior level writing requirement includes 3 units from the following:

- ENG 302W
- ENG305W
- CM 302W

+ Science elective is 4 additional units of lab science (geology 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/LScourcelist.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>
 - 30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU
- English placement: <http://www.nau.edu/comp/placement.html>
- Math placement: <http://www.cens.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml>

CONTACT INFORMATION

Engineering Programs
Building 69, Room 122A
Phone: 928-523-5251
Department Chair: Tom Rogers
Phone: 928-523-4679
Email: Thomas.Rogers@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

From: George Gumerman [ggj@nau.edu]
Sent: Monday, October 27, 2008 8:33 PM
To: Thomas Robert Rogers
Subject: Re: Curriulum change changing lab sciences classes.

Hi Tom,

Finally catching up on emails...

We probably are not moving forward with 270 as a LS class. 271 will remain LS. It would be great to have some of your students in ANT 271.

Wolf

On Oct 23, 2008, at 3:01 PM, Thomas Robert Rogers wrote:

George

This might seem strange coming from the construction amangement department, but we are changing our curriculum from a defined third 4 hour lab science course to one the students can choose.

As Anthropology is the ONLY non -CEFNS program that offers liberal studies "lab science" course (ANT 270 and 271) I hope you would not object to the possibility that our students would consider one of the your courses.

Thank you

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

1. College CEFNS

2. Academic Unit/Department Biological Sciences

3. Academic Plan Name Exercise Science

4. Subplan (if applicable)? N/A

5. Effective Date FALL 2009

6. Is this proposal for a : New Plan X Plan Change Plan Deletion

New Subplan Subplan Change Subplan Deletion

7.

For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the *current* on line academic catalog:

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

For New Plans, leave this column blank.

We offer the B.S. in exercise science with advising tracks for clinical exercise physiology and graduate and professional preparation.

To earn this degree, complete at least 120 units of coursework, which we describe in the sections that follow:

- at least 35 units of
 . Be aware that you may not use courses with a BIO prefix to satisfy these liberal studies requirements. Contact Biology Advisement for information about liberal studies courses that are recommended for this major.
- at least 86 units of major requirements
- elective courses, if needed, to reach an overall total of at least 120 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

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.)

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- at least 35 units of
 . Be aware that you may not use courses with a BIO prefix to satisfy these liberal studies requirements. Contact Biology Advisement for information about liberal studies courses that are recommended for this major.
- at least ~~86~~ **81** units of major requirements
- elective courses, if needed, to reach an overall total of at least 120 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

Finally, please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least 120 units to graduate. Contact the Biology Advisement Center for details.

MAJOR REQUIREMENTS

As an exercise science major, you must complete at least 86 units of course requirements. You must attain grades of C or better in CHM 151, 151L, 152, and 152L; BIO 201; PHY 111; MAT 125; and ENG 105.

- BIO 181: 181L, 182, 192, 201, 202, 334, 338, 338L, 460, and 460L (30 units)
- BIO 360 or 408* (3 units)
- BIO 444C or BIO 420C (3-4 units)
- HS 200 or BIO 154 (3 units)
- NTS 256 (3 units)
- CHM 151, 151L, 152, and 152L (9 units)
- CHM 230 or 235 (3-4 units)
- CHM 360 or 461 (3 units)
- MAT 125 (4 units)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

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As an exercise science major, you must complete at least ~~86~~ **81** units of course requirements. You must attain grades of C or better in CHM 151, 151L, 152, and 152L; BIO 201; PHY 111; MAT 125; and ENG 105.

- BIO 181: 181L, 182, 192, 201, 202, 334, 338, 338L, 460, and 460L (30 units)
- BIO 360 or 408* (3 units)
- ~~BIO 444C or BIO 420C (3-4 units)~~
- HS 200 or BIO 154 (3 units)
- NTS 256 (3 units)
- CHM 151, 151L, 152, and 152L (9 units)
- CHM 230 or 235 (3-4 units)
- CHM 360 or 461 (3 units)
- MAT 125 (4 units)

- STA 270 or PSY 230 (3-4 units)
- PHY 111, 111L, 112, and 112L or PHY 161, 161L, 262 and 262L (8 units)
- ENG 302W or 305W, which meet NAU's junior writing requirement (3 units)
- BIO 408C*, 420C#, 465C, 485C, or 497C, which meet NAU's senior capstone requirement (3 units)
- 5-8 additional units of exercise science electives chosen from the following list: (Please be aware that these courses may have prerequisites)

AT 200, BIO 205, 320, 331, 332, 340, 343, 344, 350, 408*, 420C (when not used as a capstone), 424, 485, 497; CHM 320/L or 440; MAT 136; ME 340, NTS 370, PSY 227, 240, 250, 350, or 415; SOC 318; STA 371 or 472

*Note: Internship (408 or 408C) requires outside placement and must be planned at least six months before the internship is to begin. See Biology Advisement for more information.

#Note: If BIO 420C is taken instead of BIO 444C, then BIO 420C may not be used to satisfy the capstone requirement.

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.

- STA 270 or PSY 230 (3-4 units)
- PHY 111, 111L, 112, and 112L or PHY 161, 161L, 262 and 262L (8 units)
- ENG 302W or 305W, which meet NAU's junior writing requirement (3 units)
- BIO 408C*, 420C, 465C, 485C, or 497C, which meet NAU's senior capstone requirement (3 units)
- 5-8 At least 6 additional units of exercise science electives chosen from the following list: (Please be aware that these courses may have prerequisites)

AT 200; BIO 205, 320, 331, 332, 340, 343, 344, 350, 408*, **416**, 420C (when not used as a capstone), 424, **444C**, 485, 497; CHM 320/L, or 440; MAT 136 (**may not be used for both the math requirement and major elective**); ME 340; NTS 370; PSY 227, 240, 250, 350, or 415; SOC 318; STA 371, or 472

*Note: Internship (408 or 408C) requires outside placement and must be planned at least six months before the internship is to begin. See Biology Advisement for more information.

~~#Note: If BIO 420C is taken instead of BIO 444C, then BIO 420C may not be used to satisfy the capstone requirement.~~

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.

You may take these remaining courses from any academic area, using these courses to pursue your specific interests and goals. We encourage you to consult with the Biology Advisement Center to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for more information about Biology undergraduate courses, and Biology faculty.

You may take these remaining courses from any academic area, using these courses to pursue your specific interests and goals. We encourage you to consult with the Biology Advisement Center to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for more information about Biology undergraduate courses, and Biology faculty.

8. 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.

9. 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage -).

These changes do not impact the learning outcomes.

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

The requirement of BIO 444C (Human Physiology) for the Exercise Science major dates back to a time when a 3+2 undergraduate-physical therapy degree plan was available. The BIO 444C satisfied physical therapy's requirement for human physiology. No such plan exists now. With the proposed

change, Exercise Science majors will still take a minimum of three classes in physiology – anatomy and physiology I and II (BIO 201 and 202) and exercise physiology (BIO 338+338L). Students who want more experience in physiology may select from several elective or capstone choices including pathology (BIO 320), advanced exercise physiology (BIO 420C) and human physiology (BIO 444C). This change makes BIO 444C an elective.

Other changes:

The Exercise Science (major) elective text was simplified to read “at least 6 additional units” rather than a range (“5-8”). Human Anatomy (BIO 416) was added to the list of pre-approved Exercise Science major electives. BIO 416 is a new class starting spring, 2009. Human anatomy is an appropriate elective as many Exercise Science majors go on to careers in health care (physical therapy, physician’s assistant, medicine etc.).

The total number of credits required for the major will be reduced from 86 to 81 by these changes. The number of credits required still satisfies the minimum for an extended major.

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

be satisfied?

These changes will not increase resource needs. The resources required for BIO 416 (new elective course) are already in place.

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


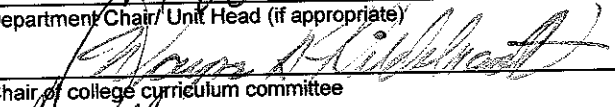

If so, attach supporting documentation from the affected departments/units and college dean.

These changes are within the Department of Biological Sciences. The change to the status of BIO 444C may decrease enrollment in BIO 444C.


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

No effect.

Certifications

| | |
|---|-----------------|
|  | <u>10.27.08</u> |
| Department Chair/ Unit Head (if appropriate) | Date |
|  | <u>11/3/08</u> |
| Chair of college curriculum committee | Date |
|  | <u>10/30/08</u> |
| Dean of college | Date |

For committee use only

| | |
|---|----------------|
|  | <u>12/2/08</u> |
| For University Curriculum Committee | Date |

Action taken: approved as submitted approved as modified

Note: Submit original to associate provost’s office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

Degree Progression Plan

| Freshman Year | | | | | |
|-----------------------|--|---|-------------------------|--|-----|
| 1 st term | | | 2 nd term | | |
| BIO 181 | Unity of Life I | 3 | CHM 151 | General Chemistry I (SCI: LAB) | 4 |
| BIO 181L | Unity of Life I Lab | 1 | CHM 151L | General Chemistry I Lab (SCI: LAB) | 1 |
| BIO 192 | Introduction to Exercise Science | 3 | BIO 182 | Unity of Life II | 4 |
| HS 200 or BIO 154 | Health Principles or Art & Science of Human Movement | 3 | ENG 105 | Critical Reading and Writing (FNRQ) | 4 |
| MAT 125 | Pre-Calculus (FNRQ) | 4 | DIV | Diversity | 3 |
| NAU 100 | Transition to College | 1 | | | |
| Total units | | | Total units | | |
| 15 | | | 16 | | |
| Sophomore Year | | | | | |
| 3 rd term | | | 4 th term | | |
| BIO 201 | Human Anatomy & Physiology I | 4 | BIO 202 | Human Anatomy & Physiology II | 4 |
| PHY 111 or 161 | General Physics I * (SCI: SAS) | 3 | PHY 112 or 262 | General Physics II (SCI: SAS) * | 3 |
| PHY 111L or 161L | General Physics I Lab * | 1 | PHY 112L or 262L | General Physics II Lab * | 1 |
| CHM 152 | General Chemistry II (SCI: SAS) | 3 | CHM 230 or CHM 235 | Organic Chemistry | 3-4 |
| CHM 152L | General Chemistry II Lab | 1 | LS | Liberal Studies | 3 |
| LS | Liberal Studies | 3 | | | |
| Total units | | | Total units | | |
| 15 | | | 14-15 | | |
| Junior Year | | | | | |
| 5 th term | | | 6 th term | | |
| BIO 338 | Physiology of Exercise | 3 | BIO 334 | Functional Anatomy & Kinesiology | 3 |
| BIO 338L | Physiology of Exercise Lab | 1 | STA 270 or PSY 230 | Applied Statistics or Intro. To Statistics in Psychology | 3-4 |
| CHM 360 or CHM 461 | Fundamental Biochemistry or Biochemistry I | 3 | ENG 302W or ENG 305W | Technical Writing or Writing in Disciplinary Communities | 3 |
| NTS 256 | Medical Nutrition (SCI: SAS) | 3 | LS | Liberal Studies | 3 |
| DIV | Diversity | 3 | GE | General Elective | 3 |
| LS | Liberal Studies | 3 | | | |
| Total units | | | Total units | | |
| 16 | | | 15-16 | | |
| Senior Year | | | | | |
| 7 th term | | | 8 th term | | |
| BIO 360 | Biomechanics | 3 | CAP | Capstone *** | 3 |
| BIO 460 | Exercise Testing & Prescription | 3 | ME | Major Elective ** | 3 |
| BIO 460L | Cardio-Pulmonary Lab | 1 | LS | Liberal Studies | 3 |
| ME | Major Elective ** | 3 | GE | General Elective (needed to reach 120 units) | 2-4 |
| LS | Liberal Studies | 3 | | | |
| GE | General Elective | 3 | | | |
| Total units | | | Total units | | |
| 16 | | | 11-13 | | |

Liberal Studies Distribution blocks

| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 35 total |
|---------------|---------------|--------------|-------------------|--------------------------------------|
| | | | CHM 151& 151L (5) | |
| | | | CHM 152 (3) | PHY 111 or 161 (3) |

PROGRAM INFORMATION

A minimum of 120 units are required for this degree.

Recitations are available and strongly encouraged for BIO 181, BIO 182, CHM 151, CHM 152, CHM 235, CHM 238, PHY 111, PHY 112, PHY 161 & PHY 262; however they are not required.

You must have grades of C or better in: CHM 151 & 151L, CHM 152 & 152L, BIO 201, PHY 111 or 161, MAT 125 and ENG 105.

* If selecting PHY 161/161L and PHY 262/262L you must have the pre/co requisite of MAT 136 and MAT 137

** Major Electives include at least 6 units of any of the following courses: (Be aware that some of these courses have pre-requisites.) AT 200, BIO 205, BIO 320, BIO 331, BIO 332, BIO 340, BIO 343, BIO 344, BIO 350, BIO 408, BIO 416, BIO 420C, BIO 424, BIO 444C, BIO 485, BIO 497, CHM 320/320L, CHM 440, MAT 136 (can not be used for both the math requirement and major elective), ME 340, NTS 370, PSY 227, PSY 240, PSY 250, PSY 350, PSY 415, SOC 318, STA 371, STA 472

*** Capstone courses include 3 units of: BIO 408C, 420C, 465C, 485C & 497C. (BIO 420C can not be used for both the capstone and major elective.)

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:
 - 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:
 - 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.
- English placement:
- Math placement:

CONTACT INFORMATION

Biology Advisement Center
Building 21, Room 144
Phone: 928-523-9304
Department Chair: Maribeth Watwood
Phone: 928-523-9322
EMAIL:

Debbie Wildermuth
Academic Services Coordinator
College of Engineering, Forestry & Natural Sciences
Building 21, Room 102
Phone: 928-523-3842
EMAIL:

Degree Progression Plan

| Freshman Year | | | | | |
|-----------------------|--|-----|-------------------------|--|-----|
| 1 st term | | | 2 nd term | | |
| BIO 181 | Unity of Life I | 3 | CHM 151 | General Chemistry I (SCI: LAB) | 4 |
| BIO 181L | Unity of Life I Lab | 1 | CHM 151L | General Chemistry I Lab (SCI: LAB) | 1 |
| BIO 192 | Introduction to Exercise Science | 3 | BIO 201 | Human Anatomy I | 4 |
| HS 200 or BIO 154 | Health Principles or Art & Science of Human Movement | 3 | ENG 105 | Critical Reading and Writing (FNRO) | 4 |
| MAT 125 | Pre-Calculus (FNRO) | 4 | DIV | Diversity | 3 |
| NAU 100 | Transition to College | 1 | | | |
| Total units | | | 15 | Total units | |
| 16 | | | | | |
| Sophomore Year | | | | | |
| 3 rd term | | | 4 th term | | |
| BIO 202 | Human Anatomy II | 4 | BIO 338 | Physiology of Exercise | 3 |
| PHY 111 or 161 | General Physics I * (SCI: SAS) | 3 | BIO 338L | Physiology of Exercise Lab | 1 |
| PHY 111L or 161L | General Physics I Lab * | 1 | CHM 230 or CHM 235 | Organic Chemistry | 3-4 |
| CHM 152 | General Chemistry II (SCI: SAS) | 3 | PHY 112 or 262 | General Physics II (SCI: SAS) * | 3 |
| CHM 152L | General Chemistry II Lab | 1 | PHY 112L or 262L | General Physics II Lab * | 1 |
| LS | Liberal Studies | 3 | LS | Liberal Studies | 3 |
| Total units | | | 15 | Total units | |
| 14-15 | | | | | |
| Junior Year | | | | | |
| 5 th term | | | 6 th term | | |
| BIO 460 | Exercise Testing & Prescription | 3 | BIO 334 | Functional Anatomy & Kinesiology | 3 |
| BIO 460L | Cardio-Pulmonary Lab | 1 | BIO 182 | Unity of Life II | 4 |
| STA 270 or PSY 230 | Applied Statistics or Intro. To Statistics in Psychology | 3-4 | ENG 302W or ENG 305W | Technical Writing or Writing in Disciplinary Communities | 3 |
| NTS 256 | Medical Nutrition (SCI: SAS) | 3 | CAP | Capstone ** | 3 |
| DIV | Diversity | 3 | LS | Liberal Studies | 3 |
| LS | Liberal Studies | 3 | | | |
| Total units | | | 16-17 | Total units | |
| 16 | | | | | |
| Senior Year | | | | | |
| 7 th term | | | 8 th term | | |
| CHM 360 or CHM 461 | Fundamental Biochemistry or Biochemistry I | 3 | BIO 408C | Internship *** | 12 |
| LS | Liberal Studies | 3 | GE | General Elective (needed to reach 120 units) | 0-1 |
| LS | Liberal Studies | 3 | | | |
| GE | General Elective | 3 | | | |
| GE | General Elective | 3 | | | |
| Total units | | | 15 | Total units | |
| 12-13 | | | | | |

Liberal Studies Distribution blocks

| | | | | |
|---------------|---------------|--------------|-------------------|---|
| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 35 total |
| | | | CHM 151& 151L (5) | |
| | | | CHM 152 (3) | PHY 111 or 161 (3) |

PROGRAM INFORMATION

A minimum of 120 units are required for this degree.

Recitations are available and strongly encouraged for BIO 181, BIO 182, CHM 151, CHM 152, CHM 235, CHM 238, PHY 111, PHY 112, PHY 161 & PHY 262; however they are not required.

You must have grades of C or better in: CHM 151 & 151L, CHM 152 & 152L, BIO 201, PHY 111 or 161, MAT 125 and ENG 105.

* If selecting PHY 161/161L and PHY 262/262L you must have the pre/co requisite of MAT 136 and MAT 137

** Capstone courses include 3 units of: BIO 420C, 465C, 485C & 497C. (BIO 465C is strongly recommended.)

*** BIO 408C require outside placement and must be planned at least 6 months before the internship is to begin.

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:
 - 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:
 - 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.
- English placement:
- Math placement:

CONTACT INFORMATION

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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 New Course

1. Is this course being proposed for Liberal Studies designation? Yes No
If yes, route completed form to Liberal Studies.
2. New course effective beginning what term and year? (ex. Spring 2008, Summer 2008) *See effective dates schedule.* Fall 2009
3. College College of Engineering, Forestry & Natural Science 4. Academic Unit /Department Center for Science Teaching and Learning
5. Course subject/catalog number TSM 101 6. Units/Credit Hours 1
7. Long course title Step 1: Inquiry Approaches to Teaching
(max 100 characters including spaces)
8. Short course title (max. 30 characters including spaces) Step 1
9. Catalog course description (max. 30 words, excluding requisites).

Students explore the teaching profession through observations and teaching science or mathematics lessons in elementary classrooms.

10. Grading option:
Letter grade 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
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) None
15. Corequisites (must be completed **with** proposed course) None
- Is the course needed for a new or existing plan of study (major, minor, certificate)? yes no

Chair of college curriculum committee

Date

10/20/08

Dean of college

Date

10/20/08

For Committees use only

For University Curriculum Committee

Date

12/2/08

Action taken:

✓

Approved as submitted

Approved as modified

Education Unit Vision: To develop educational leaders who create tomorrow's opportunities.

Education Unit Mission: To prepare competent and committed professionals who will make positive difference for children, young adults, and others in schools.

TSM 101: Step 1: Inquiry Approaches to Teaching

Semester

1 credit hour

General Information:

- Instructor's Name:
- Office address:
- Office Hours:
- Email:
- Phone:
- CSTL Phone: 523-7160

Course Prerequisites: None

Course Description: Students explore the teaching profession through observations and teaching science or mathematics lessons in elementary classrooms. Under the guidance of a Master Teacher and working in a team, you will observe an elementary classroom and be supported in the planning and teaching of three inquiry-based science or mathematics lessons in grades 3-6.

Student Learning Expectations/Outcomes for this Course: Students will be able to:

1. Complete two observations and design and teach three inquiry-based lessons using the 5E model and exemplary sources of inquiry-based science and mathematics lessons.
2. Write performance objectives and assessments of those objectives for each lesson.
3. Use probing questions to elicit feedback to determine students' acquisition of knowledge.
4. Implement strategies for achieving instructional equity.
5. Demonstrate basic proficiency in the use of technology.
6. Implement safe classroom practices.
7. Assess commitment to pursue teaching as a career.

Standards addressed in this course:

- National Council of Teachers of Mathematics Standards addressed in this course:
 - 1.1-1.4, 3.1-3.4, 4.1-4.3, 5.1-5.3, 6.1, 7.1-7.6, 8.1-8.9, 9.2-9.4, 10.5, 16.1, 16.3
 - <http://www.nctm.org/standards/default.aspx?id=58>

- *National Science Teacher Association Standards addressed in this course:*
 - 1a, 1c, 1e, 3a, 3b, 5a–5f, 6a, 8a, 8b, 10b, 10c
 - http://www.nap.edu/openbook.php?record_id=4962
- *Arizona Professional Teaching Standards addressed in this course:*
 - 1.4-1.13, 2.1-2.10, 3.1-3.15, 4.1-4.5, 5.2, 5.4, 5.5, 6.1-6.3, 6.5, 7.1b-7.5, 8.1-8.8, 8.11-8.13
 - <http://www.ade.state.az.us/certification/downloads/Teacherstandards.pdf>

Course Structure/Approach: Lecture, small group work, discussion, observations and teaching in elementary school classrooms.

Textbook and Required Materials: No textbook is required. Readings and curriculum materials will be available from the NAU Teach program.

Course Outline:

| Week | Course Topic |
|----------|---------------------------------------|
| Week 1: | Course Orientation |
| Week 2: | Writing a 5E Lesson Plan |
| Week 3: | Writing Measurable Lesson Objectives |
| Week 4: | Inquiry-Based Instruction & Safety |
| Week 5: | Revising Lesson Plan 1 |
| Week 6: | Preparing to Teach Lesson 1 |
| Week 7: | Assessment Strategies |
| Week 8: | Using the Internet for Instruction |
| Week 9: | Preparing to Teach Lesson 2 |
| Week 10: | Cooperative Learning |
| Week 11: | Preparing to Teach Lesson 3 |
| Week 12: | Meeting the Needs of Diverse Learners |
| Week 13: | Special Needs Students |
| Week 14: | Teaching Kit Inventory |
| Week 15: | Student Presentations |

Assessment of Student Learning Outcomes:

| Assessments: | Percent |
|--|---------|
| <p>Attendance and Participation - Regular attendance and active participation at all class sessions is required and will greatly enhance the student's ability to be successful. Active participation is demonstrated by constructive and thoughtful engagement in all classroom discussions and classroom activities, attentive behavior in class, coming to class prepared with the required assignments completed, and being professional in classroom interactions.</p> <p>Student will earn up to 12% of their grade for attendance and participation. Four percent will be deducted for each unexcused absence or excessive tardy. In addition, your class grade will drop one letter grade for each absence beyond three. Poor participation may also result in a decrease of this score. In order for an absence to be considered "excused" you must:</p> <ul style="list-style-type: none"> • Contact the instructor on or before the class day with an explanation. • Make arrangements to get any handouts that were distributed. • Contact your teaching partner(s) to coordinate the next lesson. | 12% |
| <p>Technology Proficiency: You will demonstrate your ability to use technology and technological resources through the following three activities:</p> <ul style="list-style-type: none"> • Completion of online Technology Proficiency Assignment – 3% • Completion of Web Scavenger Hunt assignment in VISTA – 5% • Completion of Web-based Instructional Resources assignment – 5% | 13% |
| <p>Safety Proficiency: In order to teach in the elementary classroom, you must successfully pass a safety exam.</p> | 5% |
| <p>Lesson Plans – You will submit written lesson plans for three lessons using the 5E model and include the following elements: learning objectives, instructional flow, probing questions, classroom safety, technology applications, and considerations for diverse learners. For each of the 3 lessons, 5% of the course grade will be based on the initial draft and 5% on the</p> | 30% |

| | |
|--|-------------|
| revision, for a total of 10% for each of the three lesson plans. | |
| Field Experience – During this class you will submit on VISTA a reflection for each of the two classroom observations and each of the three teaching episodes. Each reflection is due 1 week following your field experience. (3%/reflection). | 15% |
| Teaching Readiness and Evaluation- <ul style="list-style-type: none"> • Readiness - Prior to teaching, you must demonstrate your readiness to teach each lesson. This demonstration will be judged by showing your instructor the activity set-up and explain the teaching sequence. The lesson may not be taught until this requirement is completed. (2% for each of 3 lessons.) • Evaluations – After each teaching episode you must submit the one-page mentor teacher evaluations to your instructor at the next class period. (1% for each of 3 lessons.) • Teacher Development and Dispositions Rubric: At the next class period following your third lesson, you must submit the TDDR as completed by your mentor teacher and a one paragraph reflection on what this assessment means to your growth as a teacher. This assignment is a required part of the application process to the NAU Teach program. (5%) • Presentation – You will present portions of lesson activities to your peers. (5%) • Clean-Up - Clean-up and return of all materials to teaching kits. (6%) | 25% |
| Percentage Possible: | 100% |

Grading System:

| % of Points | Grade | Quality of Work |
|-------------|----------|---|
| 90 - 100 | A | Exemplary: All aspects of the work are complete and well above the minimum level specified. Well written and free of typographical and grammatical errors. Application of concepts presented in class. Evidence of careful thought and reflection. Reflective application of assignment to future teaching and learning. |
| 80 – 89 | B | Well done: Two or more of the above elements missing or of lesser quality. |
| 70 – 79 | C | Acceptable: The task was completed at the minimum level specified. Most aspects of the assignment indicated a focus on task completion as opposed to careful reflection, analysis, and/or application. |
| 60 – 69 | D | Not acceptable: Several aspects of the assignment are missing or completed at a sub-standard level. |
| Below 60 | F | Failing: Assignment not completed. |

Course policies:

- **Written Assignments:** All assignments completed outside of class must be typed and be professional in appearance. Writing errors, such as spelling, punctuation, grammatical errors, etc., will be taken into consideration and may lower the grade. Students are permitted and encouraged to proofread each other's assignments.
- **Late Assignments:** All assignments must be submitted **on or before** the due date. If an assignment is turned in late, points will be reduced by 10% for each day late up to a reduction of 50%. After 5 days (50% off), work turned in can receive only a maximum of half credit. Presentations **must** be conducted on the day scheduled or they will receive 0%.
- **Statement on plagiarism and cheating:** Plagiarism is considered as a willful act when a person knowingly uses the work of others and attempts to present it as his/her own. This academic dishonesty will not be permitted. Appropriate measures, as stated in the NAU Student Handbook, will be applied.

**NORTHERN ARIZONA UNIVERSITY
POLICY STATEMENTS**

<http://jan.ucc.nau.edu/academicadmin/plcystmt.html>

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.
2. New course effective beginning what term and year? (ex. Spring 2008, Summer 2008) *See effective dates schedule.* Fall 2009
3. College College of Engineering, Forestry & Natural Science 4. Academic Unit /Department Center for Science Teaching and Learning
5. Course subject/catalog number TSM 102 6. Units/Credit Hours 1
7. Long course title Step 2: Inquiry-Based Lesson Design
(max 100 characters including spaces)
8. Short course title (max. 30 characters including spaces) Step 2
9. Catalog course description (max. 30 words, excluding requisites).
Students explore the teaching profession through observations and teaching science or mathematics lessons in middle school classrooms.
10. Grading option:
Letter grade _____ 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
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) TSM 101 with grade of C or better
15. Corequisites (must be completed **with** proposed course) None

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

Name of plan? **BS ED Mathematics Secondary Education**

- BS ED Biology Secondary Education**
- BS ED Chemistry Secondary Education**
- BS ED Earth Science Secondary Education**
- BS ED General Science Secondary Education**
- BS ED Physics Secondary Education**

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: Barbara Austin

Molly Beauchman

Sharon Cardenas

Terry Crites

Julie Gess-Newsome

Shannon Guerrero

Jeff Hovermill

Mark James

Janet McShane

David Thompson

Catherine Ueckert

Deborah A. Wolf

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

According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to science and mathematics teacher shortages that already exist.

NAU is replicating a highly successful mathematics and science teacher certification program developed at the University of Texas at Austin. This course is one of eight courses in the new NAU Teach program sequence. NAU Teach is a science and mathematics-specific education program that will replace the existing general methods and most content-specific methods courses in the following B.S.Ed. degrees: Biology, Chemistry, Earth Science, General Science, Mathematics, and Physics.

For Official AIO Use Only:

Component Type

Consent

Topics Course

35. Approvals

Julie Gess-Newsome

Julie Gess-Newsome, Director of the Center for Science Teaching and Learning

10/20/08
Date

Wayne D. Blodgett

Chair of college curriculum committee

10/20/08
Date

[Signature]

Dean of college

11/20/08
Date

For Committees use only

Bob [Signature]

For University Curriculum Committee

12/4/09
Date

Action taken:



Approved as submitted

Approved as modified

Education Unit Vision: To develop educational leaders who create tomorrow's opportunities.

Education Unit Mission: To prepare competent and committed professionals who will make positive differences for children, young adults, and others in schools.

TSM 102: Step 2: Inquiry-Based Lesson Design

Semester
1 credit hour

General Information:

- Instructor's Name:
- Office address:
- Office Hours:
- Email:
- Phone:
- CSTL Phone: 523-7160

Course Prerequisites:

- TSM 101 with a course grade of C or better

Course Description: Students explore the teaching profession through observations and teaching science or mathematics lessons in middle school classrooms. Under the guidance of a Master Teacher and working in a team, you will observe a middle school classroom and be supported in the planning and teaching of three inquiry-based science or mathematics lessons.

Student Learning Expectations/Outcomes for this Course: Students will be able to:

1. Complete two observations and design and teach three inquiry-based lessons using the 5E model and exemplary sources of inquiry-based science and mathematics lessons.
2. Understand the unique attributes of adolescent students and implement teaching strategies that are effective in the middle school environment.
3. Implement strategies for achieving instructional equity.
4. Design and teach lessons that incorporate the use of technology.

5. Use probing questions to elicit feedback to determine students' acquisition of knowledge.
6. Use pre- and post-assessments to evaluate student learning, to provide instructive feedback to students, and as a basis for revising lesson plans.
7. Reflect on teaching experiences to revise lesson plans and provide instructive feedback to peers.
8. Implement safe classroom practices.
9. Assess commitment to pursue teaching as a career.

Standards addressed in this course:

- National Council of Teachers of Mathematics Standards addressed in this course:
 - 1.1-1.4, 3.1-3.4, 4.1-4.3, 5.1-5.3, 6.1, 7.1-7.6, 8.1-8.9, 9.2-9.4, 10.5, 16.1, 16.3
 - <http://www.nctm.org/standards/default.aspx?id=58>
- National Science Teacher Association Standards addressed in this course:
 - 1a, 1c, 1e, 3a, 3b, 5a-5f, 6a, 8a, 8b, 10b, 10c
 - http://www.nap.edu/openbook.php?record_id=4962
- Arizona Professional Teaching Standards addressed in this course:
 - 1.4-1.13, 2.1-2.10, 3.1-3.15, 4.1-4.5, 5.2, 5.4, 5.5, 6.1-6.3, 6.5, 7.1b-7.5, 8.1-8.8, 8.11-8.13
 - <http://www.ade.state.az.us/certification/downloads/Teacherstandards.pdf>

Course Structure/Approach: Lecture, small group work, discussion, observations and teaching in middle school classrooms.

Textbook and Required Materials: No textbook is required. Readings and curriculum materials will be available from the NAU Teach program. Sample readings include:

- Johnson, David R. (1982). Every Minute Counts: Making Your Math Class Work. Lebanon, IN. Dale Seymour Publications. Pearson Education Inc.
<http://www.pearsonschool.com/index.cfm?locator=PSZ13e>.
- ADE. (2008). Arizona Department of Education. Arizona Academic Standards: Mathematics Standard Articulated by Grade Level. Available online at
<http://www.ade.az.gov/sa/sdi/math.asp>
- ADE. (2008). Arizona Department of Education. Arizona Academic Standards: Science Standard Articulated by Grade Level. Available online at <http://www.ade.az.gov/sa/sdi/science.asp>.
- NCTM. (1991). Professional Standards For Teaching Mathematics. Reston, VA. NCTM. Available online at <http://my.nctm.org/ebusiness/ProductCatalog/product.aspx?ID=13201/>.
- NSES. (1996). National Research Council. National Science Education Standards. Washington DC: National Academy Press. Available online at
http://www.nap.edu/catalog.php?record_id=4962.

Course Outline:

| Week | Topic |
|-------------|---|
| Week 1 | Course Orientation & Mathematical Inquiry |
| Week 2 | Technology and Inquiry |
| Week 3 | Questioning Strategies |
| Week 4 | Understanding Adolescents |
| Week 5 | Writing Clear Directions |
| Week 6 | Preparing to Teach Lesson 1 |
| Week 7 | Pre- and Post-assessments |
| Week 8 | Preparing to Teach Lesson 2 |
| Week 9 | Introduction to Final Project |
| Week 10 | Creating Professional Teaching Materials |

| | |
|---------|---|
| Week 11 | Preparing to Teach Lesson 3 |
| Week 12 | Using Data for Lesson Revision |
| Week 13 | Essential Features of Classroom Inquiry |
| Week 14 | Preparation for Final Project |
| Week 15 | Final Project Presentations |

Assessment of Student Learning Outcomes:

| Assessments: | Percent |
|--|----------------|
| <p>Attendance and Participation - Regular attendance and active participation at all class sessions is required and will greatly enhance the student's ability to be successful. Active participation is demonstrated by constructive and thoughtful engagement in all classroom discussions and classroom activities, attentive behavior in class, coming to class prepared with the required assignments completed, and being professional in classroom interactions.</p> <p>Student will earn up to 12% of their grade for attendance and participation. Four percent will be deducted for each unexcused absence or excessive tardy. In addition, your class grade will drop one letter grade for each absence beyond three. Poor participation may also result in a decrease of this score. In order for an absence to be considered "excused" you must:</p> <ul style="list-style-type: none"> • Contact the instructor on or before the class day with an explanation. • Make arrangements to get any handouts that were distributed. • Contact your teaching partner(s) to coordinate the next lesson. | 12% |
| <p>Safety Proficiency: In order to teach in the middle school classroom, you must successfully pass a safety exam.</p> | 6% |
| <p>Lesson Plans – You will submit written lesson plans for three lessons using the 5E model and include the following elements: learning objectives, instructional flow, probing questions, classroom safety, technology applications, and considerations for diverse learners. For each of the 3 lessons, 5% of the course grade will be based on the initial draft and 5% on the revision, for a total of 10% for each of the three lesson plans.</p> | 30% |
| <p>Field Experience – During this class you will submit on VISTA a reflection for the one classroom observation and each of the three teaching episodes. Each reflection is due one week following your field experience. (3% for observation reflection and 5% for each of three teaching reflections).</p> | 18% |
| <p>Teaching Evaluation-</p> <ul style="list-style-type: none"> • Evaluations – After each teaching episode you must submit the one-page mentor teacher evaluations to your instructor at the next class period. (1% for each of 3 lessons.) • Teacher Development and Dispositions Rubric: At the next class period following your third lesson, you must submit the TDDR as completed by your mentor teacher and a one paragraph reflection on what this assessment means to your growth as a teacher. This assignment is a required part of the application process to the NAUteach program. (3%) • Clean-Up - Clean-up and return of all materials to teaching kits. (4%) | 10% |
| <p>Final Project - The final project will include a revised version of lesson plan three, pre and post assessment tools used, an analysis of the students' work, and an essay explaining your rationale for revising the lesson. Requirements to be outlined in class.</p> | 24% |
| Percentage Possible: | 100% |

Grading System:

| % of Points | Grade | Quality of Work |
|-------------|-------|---|
| 90 - 100 | A | Exemplary: All aspects of the work are complete and well above the minimum level specified. Well written and free of typographical and grammatical errors. Application of concepts presented in class. Evidence of careful thought and reflection. Reflective application of assignment to future teaching and learning. |
| 80 – 89 | B | Well done: Two or more of the above elements missing or of lesser quality. |
| 70 – 79 | C | Acceptable: The task was completed at the minimum level specified. Most aspects of the assignment indicated a focus on task completion as opposed to careful reflection, analysis, and/or application. |
| 60 – 69 | D | Not acceptable: Several aspects of the assignment are missing or completed at a sub-standard level. |
| Below 60 | F | Failing: Assignment not completed. |

Course Policies:

- **Written Assignments:** All assignments completed outside of class must be typed and be professional in appearance. Writing errors, such as spelling, punctuation, grammatical errors, etc., will be taken into consideration and may lower the grade. Students are permitted and encouraged to proofread each other's assignments.
- **Late Assignments:** All assignments must be submitted **on or before** the due date. If an assignment is turned in late, points will be reduced by 10% for each day late up to a reduction of 50%. After 5 days (50% off), work turned in can receive only a maximum of half credit. Presentations **must** be conducted on the day scheduled or they will receive 0%.
- **Statement on plagiarism and cheating:** Plagiarism is considered as a willful act when a person knowingly uses the work of others and attempts to present it as his/her own. This academic dishonesty will not be permitted. Appropriate measures, as stated in the NAU Student Handbook, will be applied.

**NORTHERN ARIZONA UNIVERSITY
POLICY STATEMENTS**

<http://jan.ucc.nau.edu/academicadmin/plcystmt.html>

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.
2. New course effective beginning what term and year? (ex. Spring 2008, Summer 2008) *See effective dates schedule.* Fall 2009
3. College College of Engineering, Forestry & Natural Science 4. Academic Unit /Department Center for Science Teaching and Learning
5. Course subject/catalog number TSM 300 6. Units/Credit Hours 3
7. Long course title Knowing and Learning
(max 100 characters including spaces)
8. Short course title (max. 30 characters including spaces) Knowing and Learning
9. Catalog course description (max. 30 words, excluding requisites).
A multidisciplinary perspective focusing on what it means to learn and know science and mathematics.
10. Grading option:
Letter grade 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
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) TSM 101 with a grade of C or better.
15. Corequisites (must be completed **with** proposed course) ~~TSM 101~~ remove

Name of plan?

- BS ED Mathematics Secondary Education
- BS ED Biology Secondary Education
- BS ED Chemistry Secondary Education
- BS ED Earth Science Secondary Education
- BS ED General Science Secondary Education
- BS ED Physics Secondary Education

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: Barbara Austin
 Molly Beauchman
 Sharon Cardenas
 Terry Crites
 Julie Gess-Newsome
 Shannon Guerrero
 Jeff Hovermill
 Mark James
 Janet McShane
 David Thompson
 Catherine Ueckert
 Deborah A. Wolf

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

According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to science and mathematics teacher shortages that already exist.

NAU is replicating a highly successful mathematics and science teacher certification program developed at the University of Texas at Austin. This course is one of eight courses in the new NAU Teach program sequence. NAU Teach is a science and mathematics-specific education program that will replace the existing general methods and most content-specific methods courses in the following B.S.Ed. degrees: Biology, Chemistry, Earth Science, General Science, Mathematics, and Physics.

For Official AIO Use Only:

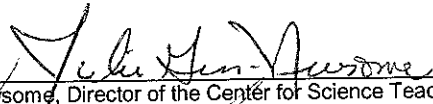
Component Type
 Consent
 Topics Course


35. Approvals

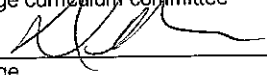
Julie Gess-Newsome, Director of the Center for Science Teaching and Learning

10/20/88
Date

35. Approvals


 Julie Gess-Newsome, Director of the Center for Science Teaching and Learning 10/20/08
Date


 Chair of college curriculum committee 10/20/08
Date


 Dean of college 10/20/08
Date

For Committees use only

For University Curriculum Committee



12/2/08
Date

Action taken:

_____ Approved as submitted

✓

Approved as modified

Education Unit Vision: To develop educational leaders who create tomorrow's opportunities.

Education Unit Mission: To prepare competent and committed professionals who will make positive difference for children, young adults, and others in schools.

TSM 300: Knowing and Learning

_____ Semester
3 credit hours

General Information:

- Instructor's Name:
- Office address:
- Office Hours:
- Email:
- Phone:
- CSTL Phone: 523-7160

Course Pre or Co-requisites: TSM 101 with a grade of C or better

Course Description: A multidisciplinary perspective focusing on what it means to learn and know science and mathematics. This course expands prospective teacher's understanding of current theories of learning and conceptual development specifically within the disciplines of mathematics and science. Students examine their own assumptions about learning as well as the needs of a diverse student population in the classroom.

Student Learning Expectations/Outcomes for this Course: *Students will be able to:*

1. Articulate various standards for knowing science and mathematics and articulate the implications of these standards for assessment, especially standardized assessment.
2. Describe the structure of knowing and learning and how they change and develop.
3. Describe various paradigms for evaluating science and mathematics understanding.
4. Describe the links between learning theory and the evolution of scientific and mathematical ideas.

5. Conduct and analyze clinical interviews.
6. Express informed opinions on current issues and tensions in education, especially as they relate to mathematics and science instruction.
7. Explore the affordances offered by various technologies in supporting knowing and learning in mathematics and science instruction.
8. Explore the implications of deficit-models of learning on issues of equitable instruction and learning environments.

Standards addressed in this course:

- *National Council of Teachers of Mathematics Standards addressed in this course:*
 - 3.4, 7.5, 8.3, 8.6
 - <http://www.nctm.org/standards/default.aspx?id=58>
- *National Science Teacher Association Standards addressed in this course:*
 - 2b, 4a, 5a, 5b, 5d, 5e, 5f, 8a
 - http://www.nap.edu/openbook.php?record_id=4962
- *Arizona Professional Teaching Standards addressed in this course:*
 - 1.3, 1.5, 1.7, 1.8, 1.13, 2.2, 2.4, 7.1 - 7.5, 8.1 - 8.4, 8.6 - 8.9, 8.12
 - <http://www.ade.state.az.us/certification/downloads/Teacherstandards.pdf>

Course Structure/Approach: Lecture, small group discussion, clinical interviews, interview analysis and reflection, readings.

Textbook and Required Materials:

- Bransford, J., Brown, A.L. & Cocking, R.R. (2000). *How people learn: Brain, mind, experience, and school: Expanded edition*. National Academy Press. ISBN: 0-309-07036-8. Available online at: http://www.nap.edu/catalog.php?record_id=9853
- Bruer, J.T. (1993). *Schools for thought: A science of learning in the classroom*. MIT Press: Bradford Books ISBN: 0-262-02352-0
- Darling-Hammond, L & Bransford, J. (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*, ISBN: 0-7879-7464-1.

Course Outline:

| Class Meeting | Course Topic |
|---------------|--|
| Week 1 | Course orientation, Theories of learning |
| Week 2 | Tasks and representations |
| Week 3 | Modeling problem solving, NAUTeach application process and Fingerprint Clearance |
| Week 4 | How experts differ from novices; Learning and transfer |
| Week 5 | Design of learning environments; Exam |
| Week 6 | Lab: Clinical interview I |
| Weeks 7 & 8 | How people learn: Mathematics instruction, NAUTeach application due |
| Week 9 | Class activity: Modeling elbows |
| Week 10 | How people learn: Science instruction; Exam |
| Week 11 | Lab: Clinical interview II |
| Week 12 | Teacher learning, Notification about admission status to NAUTeach |
| Week 13 | Rethinking the foundations of assessment |
| Week 14 | Technology to support learning; Lab: Clinical interview III |
| Week 15 | Exam |

Assessment of Student Learning Outcomes:

| Assessments: | Percent |
|--|----------------|
| Reading Discussions and Analysis: Participation on VISTA is expected regularly (2-3 times per week). | 10% |
| Clinical Interviews: Students are expected to satisfactorily complete three clinical interviews with an expert/novice pairing on a topic. The clinical interview involves formally interviewing individuals engaged in a problem solving activity. Graded aspects of the assignment include producing transcripts of the interviews and an analysis. Each clinical interview will be worth 15% of your final grade. | 45% |
| Exams: There will be three in-class written exams, two mid-terms and a final. Each will be worth 15% of your final grade. | 45% |
| Percent Possible: | 100% |

Grading System:

| % of Points | Grade | Quality of Work |
|--------------------|--------------|---|
| 90 - 100 | A | Exemplary: All aspects of the work are complete and well above the minimum level specified. Well written and free of typographical and grammatical errors. Application of concepts presented in class. Evidence of careful thought and reflection. Reflective application of assignment to future teaching and learning. |
| 80 – 89 | B | Well done: Two or more of the above elements missing or of lesser quality. |
| 70 – 79 | C | Acceptable: The task was completed at the minimum level specified. Most aspects of the assignment indicated a focus on task completion as opposed to careful reflection, analysis, and/or application. |
| 60 – 69 | D | Not acceptable: Several aspects of the assignment are missing or completed at a sub-standard level. |
| Below 60 | F | Failing: Assignment not completed. |

Course Policies:

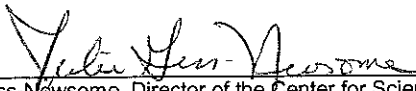
- **Attendance and Participation:** Regular attendance and active participation at all class sessions is required and will greatly enhance the student's ability to be successful. Regular attendance is expected with no more than 2 unexcused absences from class for the semester. Preparation includes, but is not limited to, coming to class prepared with the required assignments completed and engaging in thoughtful and reflective class discussion and activities. Violation of the attendance and participation policy can result in a grade reduction or failing the course.
- **Written Assignments:** All assignments completed outside of class must be typed and be professional in appearance. Writing errors, such as spelling, punctuation, grammatical errors, etc., will be taken into consideration and may lower the grade. Students are permitted and encouraged to proofread each other's assignments.
- **Late Assignments:** All assignments must be submitted **on or before** the due date. If an assignment is turned in late, points will be reduced by 10% for each day late up to a reduction of 50%. After 5 days (50% off), work turned in can receive only a maximum of half credit.
- **Exams:** Exams must be taken on the assigned day. Make-up exams will be allowed if pre-approved.

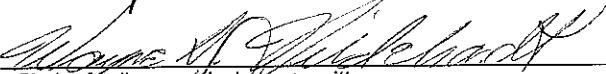
- **Statement on plagiarism and cheating:** Plagiarism is considered as a willful act when a person knowingly uses the work of others and attempts to present it as his/her own. This academic dishonesty will not be permitted. Appropriate measures, as stated in the NAU Student Handbook, will be applied.


**NORTHERN ARIZONA UNIVERSITY
POLICY STATEMENTS**

<http://jan.ucc.nau.edu/academicadmin/plcystmt.html>

35. Approvals


 Julie Gess-Newsome, Director of the Center for Science Teaching and Learning 10/20/08
 Date


 Chair of college curriculum committee 10/20/08
 Date


 Dean of college 10/20/08
 Date

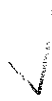
For Committees use only

For University Curriculum Committee


 Date

12/2/08

Action taken:



Approved as submitted

Approved as modified

Education Unit Vision: To develop educational leaders who create tomorrow's opportunities.

Education Unit Mission: To prepare competent and committed professionals who will make positive differences for children, young adults, and others in schools.

TSM 350: Classroom Interactions

____ Semester
3 credit hours

General Information:

- Instructor's Name:
- Office address:
- Office Hours:
- Email:
- Phone:
- CSTL Phone: 523-7160

Course Prerequisites:

- Admission to the NAU Teach program.
- TSM 102 and 300 with a grade of C or better.

Course Description: An exploration of the role of content, pedagogy, curriculum, and technology as they promote learning and impact equity. This course contains signature assessments. It is possible to pass the course without passing the signature assessments; however, all signature assessments must meet or exceed minimum criteria in order to be recommended for apprentice teaching.

This course moves from a focus on thinking and learning to a focus on teaching and learning. Prospective teachers are introduced to the way in which teaching and technology are used in classroom settings to build interrelationships between teachers and students. They are taught how content and pedagogy combine to make effective teaching. Diversity, equity, and classroom learning opportunities will be examined, as well as methods of assessment for understanding

student learning. Teaching a multi-day lesson with a peer will allow you to apply this learning to the secondary school setting.

Student Learning Expectations/Outcomes for this Course: *Students will be able to:*

1. Discuss and critique the merits of multiple models of teaching (including direct instruction, inquiry teaching, and use of small groups), including an analysis of what each model requires of teachers.
2. Critically evaluate research results on best teaching practices.
3. Observe and analyze mathematics and science instruction for evidence of effective instructional strategies and student learning.
4. Observe and analyze classroom instruction with regard to equitable and diverse participation, including students' opportunity to learn.
5. Demonstrate familiarity with several relevant teaching technologies (presentation software, computer simulation software, graphical analysis and representation software) and analyze how technology can impact classroom interactions.
6. With peers, plan, teach, and videotape a one day and a multi-day secondary mathematics/science lesson on an assigned topic.
7. Using evidence from student artifacts, examine how students' conceptual knowledge can be developed using a variety of instructional strategies.
8. Create a preliminary teaching portfolio that demonstrates beginning competency on the majority of the proficiencies in the Arizona Professional Teaching Standards.

Standards addressed in this course:

- o *National Council of Teachers of Mathematics Standards addressed in this course:*
 - 7.1-7.4, 16.1, 16.3
 - <http://www.nctm.org/standards/default.aspx?id=58>
- o *National Science Teacher Association Standards addressed in this course:*
 - 2b, 3a, 3b, 4a, 5a-5f, 6a, 10a-10d
 - http://www.nap.edu/openbook.php?record_id=4962
- o *Arizona Professional Teaching Standards addressed in this course:*
 - 1.1, 1.3, 1.4, 1.7-1.13, 2.1-2.10, 3.1-3.15, 4.3, 4.5, 8.1-8.4, 8.6-8.8, 8.12
 - <http://www.ade.state.az.us/certification/downloads/Teacherstandards.pdf>

Course Structure/Approach: Lecture, readings, small group work, observations and teaching in the secondary schools.

Textbook and Required Materials:

- Subscription to TaskStream.
- Required readings and references are available in VISTA or for checkout from the NAU Teach program.
- Sample readings include:
 - Anyon, J. (1980) Excerpt from "Social class and the hidden curriculum of work."
Downloaded from <http://www.scf.usc.edu/~clarkjen/Jean%20Anyon.htm>, 8/24/07.
 - Ball, D. (1993). With an eye on the mathematical horizon: Dilemmas of teaching elementary school mathematics. *Elementary School Journal*, 93(4), 373-397.
 - Delpit, L. (1995). *Other people's children: Cultural conflict in the Classroom* (pp. 11-47) New York: The New Press.
 - Doran, R., Chan, F. & Tamir, P. (1998). Chapter 2: Developing new assessments. In *Science educator's guide to assessment*. Arlington, VA: National Science Teachers Association.
 - Johnson, D., Johnson, R., & Holubec, E. (1994). Chapter 3: Essential components of cooperative learning. In *The new circles of learning: Cooperation in the classroom and school* (25-35). Alexandria, VA: ASCD

Lawson, A.E. (2002). The learning cycle. In R.G. Fuller (Ed). A love of discovery: Science education, the second career of Robert Karplus. New York: Kluwer Academic. (p.51-62).

Course Outline:

| Week | Topic |
|---------|---|
| Week 1 | Course introduction |
| Week 2 | 5E lesson analysis |
| Week 3 | Assessments; Learning in a second language |
| Week 4 | Round robin practice teaching |
| Week 5 | Lesson #1 presentations and debrief |
| Week 6 | Designing group work |
| Week 7 | Technology: Nature of science/math simulation, Lesson #2 Planning |
| Week 8 | Questioning Analysis; Cultural conflict |
| Week 9 | Designing inclusive lessons |
| Week 10 | Lesson #2 activity practice; Gender issues in science and mathematics |
| Week 11 | Teaching round robin |
| Week 12 | Lesson #2 debrief and video transfer |
| Week 13 | Prejudices and stereotypes |
| Week 14 | Class issues and school funding |
| Week 15 | Equity poster presentations |

Assessment of Student Learning Outcomes:

*Signature assessment that must be successfully completed prior to apprentice teaching.

| Assessments: | Percent |
|---|-------------|
| Reading Reflections: Online responses to readings. | 10% |
| *Safety Proficiency (NSTA Assessment 6): In order to teach in the classroom, you must successfully pass a safety exam. | 5% |
| Preparation and Implementation of Teaching: In this course you will interview and observe classroom teachers and teach in secondary classrooms. <ul style="list-style-type: none"> • One-day lesson: Lesson plan (5%), lesson implementation (3%), mentor teacher evaluation (1%). • Multi-day lesson: The two lessons will be worth 9% for each day of instruction: lesson plan (5%), lesson implementation (3%), mentor teacher evaluation (1%). • *Teacher Development and Dispositions Rubric (NCATE Standard 1, NCTM Assessment 7): At the next class period following your third lesson, you must submit the TDDR as completed by your mentor teacher and a one paragraph reflection on what this assessment means to your growth as a teacher. (3%) | 30% |
| Formal Analyses and Reflections: There will be seven reflection papers. Assignments will be as follows: two observations, two lesson analyses, two essays, and a preliminary portfolio check. | 45% |
| Equity Poster and Presentations (NCATE Standard 1) | 10% |
| Percentage Possible: | 100% |

Grading System:

| % of Points | Grade | Quality of Work |
|-------------|-------|---|
| 90 - 100 | A | Exemplary: All aspects of the work are complete and well above the minimum level specified. Well written and free of typographical and grammatical errors. Application of concepts presented in class. Evidence of careful thought and reflection. Reflective application of assignment to future teaching and learning. |
| 80 - 89 | B | Well done: Two or more of the above elements missing or of lesser quality. |
| 70 - 79 | C | Acceptable: The task was completed at the minimum level specified. Most aspects of the assignment indicated a focus on task completion as opposed to careful reflection, analysis, and/or application. |
| 60 - 69 | D | Not acceptable: Several aspects of the assignment are missing or completed at a sub-standard level. |
| Below 60 | F | Failing: Assignment not completed. |

Course Policies:

- **Attendance and Participation:** Regular attendance and active participation at all class sessions is required and will greatly enhance the student's ability to be successful. Regular attendance is expected with no more than 2 unexcused absences from class for the semester. Preparation includes, but is not limited to, coming to class prepared with the required assignments completed and engaging in thoughtful and reflective class discussion and activities. Violation of the attendance and participation policy can result in a grade reduction or failing the course.
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**NORTHERN ARIZONA UNIVERSITY
POLICY STATEMENTS**

<http://jan.ucc.nau.edu/academicadmin/plcystmt.html>

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.
2. New course effective beginning what term and year? (ex. Spring 2008, Summer 2008) *See effective dates schedule.* Fall 2009
3. College College of Engineering, Forestry & Natural Science 4. Academic Unit /Department Center for Science Teaching and Learning
5. Course subject/catalog number TSM 404 6. Units/Credit Hours 3
7. Long course title Research Methods
(max 100 characters including spaces)
8. Short course title (max. 30 characters including spaces) Research Methods
9. Catalog course description (max. 30 words, excluding requisites).
Students design, conduct, and present four inquiries using scientific and mathematical tools. Contains assessments that must be successfully completed prior to apprentice teaching.
10. Grading option:
Letter grade _____ 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
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) Admission to the NAUTeach program
15. Corequisites (must be completed *with* proposed course) None

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

- BS ED Mathematics Secondary Education**
- BS ED Biology Secondary Education**
- BS ED Chemistry Secondary Education**
- BS ED Earth Science Secondary Education**
- BS ED General Science Secondary Education**
- BS ED Physics Secondary Education**

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: Barbara Austin
Molly Beauchman
David Best
David Cole
Terry Crites
Brandon Cruickshank
Julie Gess-Newsome
Shannon Guerrero
Jeff Hovermill
Mark James
Janet McShane
James Sample
Catherine Ueckert

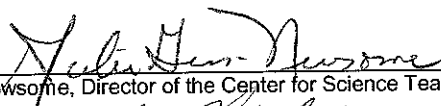
19. Justification for new course, including unique features if applicable. (Attach proposed syllabus in the approved university format).


According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to science and mathematics teacher shortages that already exist.


NAU is replicating a highly successful mathematics and science teacher certification program developed at the University of Texas at Austin. This course is one of eight courses in the new NAUTeach program sequence. NAUTeach is a science and mathematics-specific education program that will replace the existing general methods and most content-specific methods courses in the following B.S.Ed. degrees: Biology, Chemistry, Earth Science, General Science, Mathematics, and Physics.

| |
|----------------------------------|
| For Official AIO Use Only |
| Component Type |
| Consent |
| Topics Course |


25. Approvals


 Julie Gess-Newsome, Director of the Center for Science Teaching and Learning 10/20/08
 Date


 Chair of college curriculum committee 10/20/08
 Date


 Dean of college 10/20/08
 Date

For Committees use only


 For University Curriculum Committee 12/2/08
 Date

Action taken:

 Approved as submitted Approved as modified

Education Unit Vision: To develop educational leaders who create tomorrow's opportunities.

Education Unit Mission: To prepare competent and committed professionals who will make positive differences for children, young adults, and others in schools.

TSM 404: Research Methods
 _____ Semester
 3 credit hours

General Information:

- Instructor's Name:
- Office address:
- Office Hours:
- Email:
- Phone:
- CSTL Phone: 523-7160

Course Prerequisites: Admission to the NAU Teach program or instructor consent.

Course Description: Students design, conduct, and present four inquiries using scientific and mathematical tools. This course contains signature assessments. It is possible to pass the course without passing the signature assessments; however, all signature assessments must meet or exceed minimum criteria in order to be recommended for apprentice teaching.

Student Learning Expectations/Outcomes for this Course: Students will be able to:

1. Use inquiries to answer scientific questions.
2. Design inquiries to reduce systematic and random errors.
3. Use probes and computers to gather and analyze data.
4. Use data analysis tools, including statistics.
5. Examine scientific ethics, including the ethical treatment of human subjects.
6. Identify and apply safe laboratory procedures.

7. Conduct a scientific literature review.
8. Apply scientific arguments in matters of social importance.
9. Write and present scientific papers.

Standards addressed in this course:

- *National Council of Teachers of Mathematics Standards:*
 - 3.1, 3.2, 4.1–4.3, 5.1–5.3, 6.1, 9.1–9.3, 10.1, 10.2, 10.4, 10.5, 13.1–13.3, 14.1–14.7, 15.1–15.3
 - <http://www.nctm.org/standards/default.aspx?id=58>
- *National Science Teacher Association Standards:*
 - 1D, 1E, 3B, 5D, 9A, 9C, 9D
 - http://www.nap.edu/openbook.php?record_id=4962
- *Arizona Professional Teaching Standards:*
 - 7.1–7.5, 8.10
 - <http://www.ade.state.az.us/certification/downloads/Teacherstandards.pdf>

Course Structure/Approach: Lectures, readings, discussions, small group work, and laboratory activities.

Textbook and Required Materials:

- Subscription to TaskStream.
- Feynman, R. P. (1985). Surely You're Joking, Mr. Feynman. W.W. Norton & Company, Inc. ISBN 0-393-31604-1. Available on line at <http://www.gorgorat.com/>
- UT Austin. (2008). Research methods; Student guide. University of Texas at Austin. Austin, TX.

Course Outline:

| Week | Topic | Inquiry |
|---------|--|------------|
| Week 1 | Asking and Answering Scientific Questions, Experimental Design, Safety | Inquiry #1 |
| Week 2 | | |
| Week 3 | | |
| Week 4 | Ethics in science, human subjects | Inquiry #2 |
| Week 5 | | |
| Week 6 | Conducting searches and reviews of the scientific literature | Inquiry #3 |
| Week 7 | | |
| Week 8 | | |
| Week 9 | Inquiry #2 Presentation | Inquiry #4 |
| Week 10 | Data analysis techniques, including basic statistics | |
| Week 11 | | |
| Week 12 | | |
| Week 13 | Inquiry #4 Oral Presentation Preparation | |
| Week 14 | Debate Presentation | |
| Week 15 | Inquiry Discussions | |

Assessment of Student Learning Outcomes:

*Signature assessment that must be successfully completed prior to apprentice teaching.

| Assessments: | Percent |
|--|---------|
| Homework and Reflections: There are homework assignments and article reflections, due weekly. | 20% |
| *Safety Proficiency (NSTA Assessment 6): You must successfully pass a safety exam. | 10% |
| Scientific Inquiries: <ul style="list-style-type: none"> • Inquiry 1: Scientific inquiry home investigation write-up (5%) • Inquiry 2: Scientific proposal, draft write-up, oral presentation, final write-up (18%) | |

| | |
|---|-------------|
| <ul style="list-style-type: none"> Inquiry 3: Surveying and testing, statistical analysis and write-up (10%) *Inquiry 4 (NSTA Assessment 7): Scientific proposal, draft write-up, oral presentation using PowerPoint, final write-up using scientific protocols (27%) | 60% |
| Debate Presentation: Classroom debate based upon reviewed scientific literature. | 10% |
| Percentage Possible: | 100% |

Grading System:

| % of Points | Grade | Quality of Work |
|-------------|----------|---|
| 90 - 100 | A | Exemplary: All aspects of the work are complete and well above the minimum level specified. Well written and free of typographical and grammatical errors. Application of concepts presented in class. Evidence of careful thought and reflection. Reflective application of assignment to future teaching and learning. |
| 80 - 89 | B | Well done: Two or more of the above elements missing or of lesser quality. |
| 70 - 79 | C | Acceptable: The task was completed at the minimum level specified. Most aspects of the assignment indicated a focus on task completion as opposed to careful reflection, analysis, and/or application. |
| 60 - 69 | D | Not acceptable: Several aspects of the assignment are missing or completed at a sub-standard level. |
| Below 60 | F | Failing: Assignment not completed. |

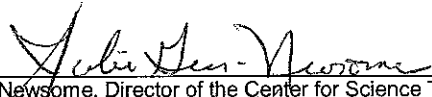
Course Policies:

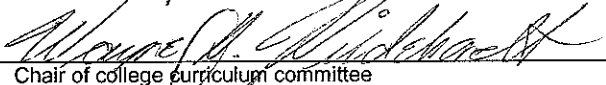
- Attendance and Participation:** Regular attendance and active participation at all class sessions is required and will greatly enhance the student's ability to be successful. Regular attendance is expected with no more than 2 unexcused absences from class for the semester. Preparation includes, but is not limited to, coming to class prepared with the required assignments completed and engaging in thoughtful and reflective class discussion and activities. Violation of the attendance and participation policy can result in a grade reduction or failing the course.
- Written Assignments:** All assignments completed outside of class must be typed and be professional in appearance. Writing errors, such as spelling, punctuation, grammatical errors, etc., will be taken into consideration and may lower the grade. Students are permitted and encouraged to proofread each other's assignments.
- Late Assignments:** All assignments must be submitted **on or before** the due date. If an assignment is turned in late, points will be reduced by 10% for each day late up to a reduction of 50%. After 5 days (50% off), work turned in can receive only a maximum of half credit. Presentations **must** be conducted on the day scheduled or they will receive 0%.
- Statement on plagiarism and cheating:** Plagiarism is considered as a willful act when a person knowingly uses the work of others and attempts to present it as his/her own. This academic dishonesty will not be permitted. Appropriate measures, as stated in the NAU Student Handbook, will be applied.


**NORTHERN ARIZONA UNIVERSITY
POLICY STATEMENTS**

<http://jan.ucc.nau.edu/academicadmin/plcystmt.html>

35. Approvals


 Julie Gess-Newsome, Director of the Center for Science Teaching and Learning 10/20/08
 Date


 Chair of college curriculum committee 10/20/08
 Date


 Dean of college 10/20/08
 Date

For Committees use only


 For University Curriculum Committee 12/2/08
 Date

Action taken: ↓ Approved as submitted Approved as modified

Education Unit Vision: To develop educational leaders who create tomorrow's opportunities.

Education Unit Mission: To prepare competent and committed professionals who will make positive difference for children, young adults, and others in schools.

TSM 450: Project-Based Instruction

____ Semester
3 credit hours

General Information:

- | | |
|----------------------|------------------------|
| • Instructor's Name: | • Email: |
| • Office address: | • Phone: |
| • Office Hours: | • CSTL Phone: 523-7160 |

Course Pre or Co-requisites: TSM 350 with a grade of C or better.

Course Description: Students design, implement, and evaluate project-based curricula. Use of technology in instruction and observations of project-based learning are emphasized. This course contains signature assessments. It is possible to pass the course without passing the signature assessments; however, all signature assessments must meet or exceed minimum criteria in order to be recommended for apprentice teaching.

In this course, students aim to master new technologies for project-based instruction in secondary mathematics and science classrooms. Students discuss the use of assessment to improve student learning and teach project-based lessons to secondary students.

- Student Learning Expectations/Outcomes for this Course:** Students will be able to:
1. Discuss and critique the importance of project-based instruction in terms of students' cognitive development, equity, and motivation.
 2. Reflect on applications of educational theory as it relates to classroom practice in the area of project-based instruction.

3. Distinguish between project-based and other instructional approaches and decide which approach best fits instructional goals based on benefits and limitations of each.
4. Evaluate the usefulness of technology in achieving learning objectives and select appropriate resources for student use based on the relationship of salient features of the technology to learning objectives.
5. Describe examples of project-based instruction in mathematics or science and analyze those examples in terms of models for project-based instruction.
6. Discuss lab safety and liability issues related to project-based instruction and wet-lab or field environments.
7. Demonstrate skill in setting up and managing wet lab and field project-based environments.
8. Use design principles to develop an interdisciplinary project-based unit for secondary mathematics and/or science courses integrating relevant technologies.
9. Develop alternative assessments appropriate for project-based instruction.

Standards addressed in this course:

- *National Council of Teachers of Mathematics Standards addressed in this course:*
 - 4.2, 4.3, 6.1, 7.6, 8.1, 8.2, 8.4, 8.6, 8.7, 8.9, 16.1, 16.3
 - <http://www.nctm.org/standards/default.aspx?id=58>
- *National Science Teacher Association Standards addressed in this course:*
 - 1a, 1b, 3a, 3b, 4a, 4b, 5a - 5f, 6a, 6b, 7a, 7b, 8a, 9a, 9d
 - http://www.nap.edu/openbook.php?record_id=4962
 -
- *Arizona Professional Teaching Standards addressed in this course:*
 - 1.1, 1.2, 1.4 - 1.13, 2.1 - 2.10, 3.1 - 3.12
 - <http://www.ade.state.az.us/certification/downloads/Teacherstandards.pdf>

Course Structure and Approach: Lecture, small group work, classroom observations, designing and implementing secondary science and mathematics instruction in alternative settings, readings and reflections.

Textbook and Required Materials:

- Subscription to TaskStream.
- Boaler, J. (2002). *Experiencing school mathematics: Traditional and reform approaches to teaching and their impact on student learning*. University Press. ISBN: 0-805-84005-6.
- Krajcik, J. S., Czerniak, C. M., & Berger, C. (1998). *Teaching children science: A project-based approach*. McGraw- Hill. ISBN: 0-070-36007-3.
- Polman, J. L. (2000). *Designing project-based science: Connecting learners through guided inquiry*. Teachers College Press. ISBN: 0-807-73912-X.
- Supplemental journal articles and readings.

Course Outline:

| Week | Course Topic |
|--------|---|
| Week 1 | Examination of project-based instruction |
| Week 2 | Curriculum design: Adoption vs. appropriation |
| Week 3 | Lessons from research on the value of PBI |
| Week 4 | Driving questions; Formative and self-assessments |
| Week 5 | Investigations vs benchmark lesson |
| Week 6 | Labs, investigations, and concept maps |
| Week 7 | Anchored instruction |
| Week 8 | Developing PBI units |

| | |
|---------|---|
| Week 9 | Construct understanding in science and mathematics |
| Week 10 | How scientific investigations are developed in PBI |
| Week 11 | Learning technologies to support investigations in PBI |
| Week 12 | Writing grants |
| Week 13 | Differentiated learning, Safety issues in science and mathematics |
| Week 14 | Assessment in science and mathematics |
| Week 15 | Classroom management, Presentations of final projects |

Assessment of Student Learning Outcomes:

*Signature assessment that must be successfully completed prior to apprentice teaching.

| Assessments: | Percent |
|--|---------|
| On-Line Discussions: You will participate in on-line discussions each week in order to reflect on course readings and field experiences. | 10% |
| *Safety Proficiency (NSTA Assessment 6): In order to participate in classroom or field-based teaching, you must successfully pass a safety exam. | 5% |
| Site Visits: You will complete a minimum of four hours of classroom observation in a school that is implementing project-based instruction. A written description of what you observed is required and will be posted on VISTA as a resource to others in the class. | 10% |
| <p>Study Trip: You will complete <u>one</u> of the following two assignments.</p> <ol style="list-style-type: none"> 1) You will visit a local field-based learning area, such as the arboretum, national park or monument, or observatory. After an initial observation, you and a team will develop a 30-45 minute lesson to be delivered to secondary students at a second visit to the site. Lessons will be delivered to two different groups of students and videotaped. Videotapes will be analyzed between the first and second lessons so that improvements in delivery can be made for the second lesson. 2) You will work in a local secondary classroom for 24 contact hours. During this time you will design and deliver one or more lessons. Lessons will be delivered to two different groups of students and videotaped. Videotapes will be analyzed between the first and second lessons so that improvements in delivery can be made for the second lesson. <ul style="list-style-type: none"> • Lesson plans: 10% • Reflection: 10% • *Teacher Development and Dispositions Rubric (NCATE Standard 1): Within one week of the final teaching episode, submit the TDDR from the participating teacher, including your reflection on what this assessment means about your growth as a teacher. 5% | 25% |
| <p>Midterm: The mid-term will be composed of two sections:</p> <ul style="list-style-type: none"> • Observations: Using the descriptions of project-based learning episodes created by your peers and posted on VISTA, compare and contrast the following elements of each class: degree of constructivist learning, degree and types of student collaboration, level and type of student support, classroom management strategies used by the teachers, strategies used to support diverse learners, use of technology, and assessment strategies used. (10%) • Applications: Create a project proposal for the development of a project-based instructional unit suitable for use in a school setting. This proposal should include the following: your driving question and its relationship to learning theory and appropriate grounding in the required curriculum for the course and grade level for which the unit is designed, the national and state standards used in developing the curriculum, topics and justification for three benchmark lessons, topics and justification for two inquiry-based investigations. (10%) • You may work together on this midterm and may consult any resources you deem necessary. While the final assignment must be submitted <u>individually</u>, you should include a list of people with whom you collaborated and the brief explanation of your contribution to the submitted work. | 20% |
| *Unit Planning (NCTM Assessment 3, NSTA Assessment 3 & 8): For the final project in this course, you will prepare a complete unit of instruction (two to six weeks) to be taught in a secondary class of your choice. This is a small group activity. Your unit will include the following components: project rationale and theoretical basis for project, concept map, a | 30% |

| | |
|--|-------------|
| calendar of lessons, objectives, anchor video, benchmark lessons, investigations, strategies for diverse learners, integration of technology, assessment strategy, and related resources. In addition, your group will submit a request for funding with a budget, rationale, and theoretical base using the format required for the TAPESTRY grants. Finally, you will be required to complete a contextual reflection on the unit plan describing how the unit plan aligned with NSTA or NCTM standards. All components of this assignment must pass with a minimum score of "novice" in order to successfully meet the standards for this assignment. | |
| Percentage Possible: | 100% |

Grading System:

| % of Points | Grade | Quality of Work |
|-------------|----------|---|
| 90 - 100 | A | Exemplary: All aspects of the work are complete and well above the minimum level specified. Well written and free of typographical and grammatical errors. Application of concepts presented in class. Evidence of careful thought and reflection. Reflective application of assignment to future teaching and learning. |
| 80 – 89 | B | Well done: Two or more of the above elements missing or of lesser quality. |
| 70 – 79 | C | Acceptable: The task was completed at the minimum level specified. Most aspects of the assignment indicated a focus on task completion as opposed to careful reflection, analysis, and/or application. |
| 60 – 69 | D | Not acceptable: Several aspects of the assignment are missing or completed at a sub-standard level. |
| Below 60 | F | Failing: Assignment not completed. |

Course Policies:

- **Attendance and Participation:** Regular attendance and active participation at all class sessions is required and will greatly enhance the student's ability to be successful. Regular attendance is expected with no more than 2 unexcused absences from class for the semester. Preparation includes, but is not limited to, coming to class prepared with the required assignments completed and engaging in thoughtful and reflective class discussion and activities. Violation of the attendance and participation policy can result in a grade reduction or failing the course.
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- **Statement on plagiarism and cheating:** Plagiarism is considered as a willful act when a person knowingly uses the work of others and attempts to present it as his/her own. This academic dishonesty will not be permitted. Appropriate measures, as stated in the NAU Student Handbook, will be applied.

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.

2. New course effective beginning what term and year? (ex. Spring 2008, Summer 2008) *See effective dates schedule.* Fall 2009

3. College College of Engineering, Forestry & Natural Science 4. Academic Unit /Department Center for Science Teaching and Learning

5. Course subject/catalog number TSM 495C 6. Units/Credit Hours 12

7. Long course title Apprentice Teaching
(max 100 characters including spaces)

8. Short course title (max. 30 characters including spaces) Apprentice Teaching

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

Students participate in teaching science and/or mathematics in the secondary schools as their capstone field experience. Contains assessments that must be successfully completed in order to earn an Institutional Recommendation for certification.

10. Grading option:
Letter grade _____ 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) Admission to Apprentice Teaching

15. Corequisites (must be completed *with* proposed course) TSM 496C Apprentice Teaching Seminar

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

16. Is the course needed for a new or existing plan of study (major, minor, certificate)?

yes no

Name of plan?

BS ED Mathematics Secondary Education
BS ED Biology Secondary Education
BS ED Chemistry Secondary Education
BS ED Earth Science Secondary Education
BS ED General Science Secondary Education
BS ED Physics Secondary Education

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
yes no

If yes, does it require listing in the Course Equivalency Guide?

Please list, if known, the institution and subject/catalog number of the course

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

Barbara Austin
Molly Beauchman
Sharon Cardenas
Terry Crites
Julie Gess-Newsome
Shannon Guerrero
Jeff Hovermill
Mark James
Janet McShane
David Thompson
Catherine Ueckert
Deborah A. Wolf

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

According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to science and mathematics teacher shortages that already exist.

NAU is replicating a highly successful mathematics and science teacher certification program developed at the University of Texas at Austin. This course is one of eight courses in the new NAUTeach program sequence. NAUTeach is a science and mathematics-specific education program that will replace the existing general methods and most content-specific methods courses in the following B.S.Ed. degrees: Biology, Chemistry, Earth Science, General Science, Mathematics, and Physics.

This course is a capstone course for the BSEd majors in the sciences and mathematics. The focus of this capstone experience is the synthesis and translation of the content and pedagogical knowledge learned in the program to the secondary classroom. Included in this experience is an apprentice teaching evaluation (mid-term and final) that includes an assessment of the following categories: Subject matter knowledge, Equity, Teacher preparation, Classroom environment, Instruction and delivery, and professional responsibilities. Inherent in these categories is the ability to provide effective oral communication to students, parents, and other professionals.

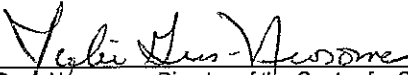
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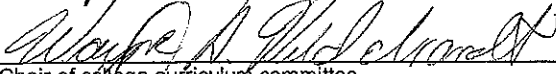
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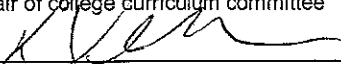
Consent

Topics Course


35. Approvals


Julie Gess-Newsome, Director of the Center for Science Teaching and Learning Date 10/22/08


Chair of college curriculum committee Date 10/20/08


Dean of college Date 10/20/08

For Committees use only


University Curriculum Committee Date 12/2/08

Action taken:

Approved as submitted

Approved as modified



NORTHERN ARIZONA UNIVERSITY

LIBERAL STUDIES PROPOSAL/DELETION FORM

CHECK THE APPROPRIATE BOX(ES)

Distribution Blocks

- This is a new course that I want to offer for Liberal Studies **Distribution Block** credit. A UCC New Course Proposal Form must also be submitted to the UCC.
- This is an existing course that is not currently approved for liberal studies **Distribution Block** credit, but I would like for it to be considered for the next catalog year.
- This course is already approved for liberal studies **Distribution Block** credit, but I would like to realign it with the liberal studies changes that took affect in fall 2007.

- This course is already approved for liberal studies **Distribution Block** credit, but I would like to make substantial changes to the syllabus, so I am submitting it for re-approval.
Provide details about the change(s) here or on the attached syllabus.
A UCC Course Change Proposal Form may also need to be submitted to the UCC.
- This course is already approved for liberal studies **Distribution Block** credit, but I would like to delete it from the list of approved courses.
If the course is to be deleted from the catalog a UCC Course Deletion Form also must be submitted to the UCC

Junior Level Writing

- This is a new course that I want to offer as a **Junior Level Writing** course.
A UCC New Course Proposal Form must also be submitted to the UCC.
- This is an existing course that is not currently approved as a **Junior Level Writing** course, but I would like for it to be considered for the next catalog year.
- This course is already approved as a **Junior Level Writing** course, but I would like to make substantial changes to the syllabus, so I am submitting it for re-approval.
Provide details about the change(s) here or on the attached syllabus.
A UCC Course Change Proposal Form may also need to be submitted to the UCC.
- This course is already approved as a **Junior Level Writing** course, but I would like to delete it from the list of approved courses.
If the course is to be deleted from the catalog a UCC Course Deletion Form also must be submitted to the UCC

Senior Capstone

- This is a new course that I want to offer as a **Senior Capstone**.
A UCC New Course Proposal Form must also be submitted to the UCC.
- This is an existing course that is not currently approved as a **Senior Capstone** course, but I would like for it to be considered for the next catalog year.
- This course is already approved as a **Senior Capstone** course, but I would like to make substantial changes to the syllabus, so I am submitting it for re-approval.
Provide details about the change(s) here or on the attached syllabus.
A UCC Course Change Proposal Form may also need to be submitted to the UCC.
- This course is already approved as a **Senior Capstone** course, but I would like to delete it from the list of approved courses.
If the course is to be deleted from the catalog a UCC Course Deletion Form also must be submitted to the UCC
- Other.** Please explain.

PROVIDE THE FOLLOWING INFORMATION

Course subject/catalog number: **TSM495C**

Course title: **Apprentice Teaching**

Department chair name, phone, email: **Julie Gess-Newsome, Center for Science Teaching and Learning, 523-9527, Julie.gess-newsome@nau.edu**

College contact name, phone, email: **Debra Larson, 523-1757, debra.larson@nau.edu**

SELECT ONE DISTRIBUTION BLOCK

If a topics course, must apply to ALL sections.

- Aesthetic and Humanistic Inquiry Cultural Understanding
 Science/Applied Science Social and Political Worlds

SELECT ONE ESSENTIAL SKILL TO BE ASSESSED

- Critical Thinking Effective Writing Effective Oral Communication
 Scientific Reasoning Quantitative Reasoning

Is this a topics course? yes no

Approvals:

Department chair: Julie Ann Newome 10/28/08
Department curriculum committee chair: Wayne A. Blackwell 10/29/08
Dean of college: [Signature] 10/28/08

When completed, please save this proposal (with the syllabus pasted below) as a .doc file and email it as an attachment to shelly.pleasants@nau.edu. Please also send a hard copy, complete with signatures, to Shelly Pleasants at NAU Box 4122.

Date _____ For Liberal Studies Committee
 Approved as submitted Approved as modified

Date _____ For University Curriculum Committee
 Approved as submitted Approved as modified

*The syllabus below represents a **master syllabus**, which means that it reflects elements common among all sections of this course.*

*For **topics courses**, the syllabus below identifies the student learning outcomes that will be found in all topic syllabi, and also explains by what methods student learning outcomes will be assessed in all topic syllabi offered under this course number.*

Click [here](#) for a syllabus template.

Education Unit Vision: To develop educational leaders who create tomorrow's opportunities.

Education Unit Mission: To prepare competent and committed professionals who will make positive differences for children, young adults, and others in schools.

TSM 495C: Apprentice Teaching

Semester
12 credit hours

General Information:

- Instructor's Name:
- Office address:
- Office Hours:
- Email:
- Phone:
- CSTL Phone: 523-7160

Course Prerequisites: Admission to Apprentice Teaching and department consent.

Course Co-requisite: TSM 496C

Course Description: Students participate in teaching science and/or mathematics in the secondary schools as their capstone field experience. This course contains signature assessments that must be successfully completed in order to earn an Institutional Recommendation for certification.

This course is a capstone course for the BSEd majors in the sciences and mathematics. The focus of this capstone experience is the synthesis and translation of the content and pedagogical knowledge learned in the program to the secondary classroom. Included in this experience is an apprentice teaching evaluation (mid-term and final) that includes an assessment of the following categories: Subject matter knowledge, Equity, Teacher preparation, Classroom environment, Instruction and delivery, and professional responsibilities. Inherent in these categories is the ability to provide effective oral communication to students, parents, and other professionals.

Student Learning Expectations/Outcomes for this Course: *Students will be able to:*

1. Design instruction that develops all students' abilities to meet academic standards.
2. Create and maintain a learning climate that supports the development of all students' abilities to meet academic standards.
3. Implement and manage instruction that develops all students' abilities to meet academic standards.
4. Assess learning and communicate results to all students, parents and other appropriate professionals with respect to all students' abilities to meet academic standards.
5. Collaborate with colleagues, parents the community and other appropriate agencies to design, implement, and support learning that supports all students' abilities to meet academic standards.
6. In collaboration with other professionals, participate in the design, implementation, and assessment of individual education programs.

Standards addressed in this course:

- *National Council of Teachers of Mathematics Standards addressed in this course:*
 - 3.4, 6.1, 7.1-7.6, 8.1-8.4, 8.7-8.9, 16.2, 16.3
 - <http://www.nctm.org/standards/default.aspx?id=58>

- *National Science Teacher Association Standards addressed in this course:*
 - 1a-1d, 5a-5f, 6a, 6b, 8a-8c, 9b, 9c, 10a-10d
 - http://www.nap.edu/openbook.php?record_id=4962
- *Arizona Professional Teaching Standards addressed in this course:*
 - 1.1-1.13, 2.1-2.10, 3.1-3.15, 4.1-4.5, 5.1-5.5, 6.1-6.3, 6.5, 7.1b-7.5, 8.1-8.13, 9.1, 9.2, 9.5
 - <http://www.ade.state.az.us/certification/downloads/Teacherstandards.pdf>

Course Structure/Approach: Directed apprentice teaching in the secondary schools.

Textbook and Required Materials:

- Subscription to TaskStream.
- NAUTeach Apprentice Teaching Handbook.

Course Outline and Expectations:

One 16-week placement:

| | | |
|-------------|-----------|--|
| Weeks 1-2 | Phase I | Observation of class; meet with the cooperating teacher and University Facilitator |
| Weeks 3-7 | Phase II | Teacher candidate takes partial responsibility of the class |
| Weeks 8-14 | Phase III | Teacher candidate takes full responsibility for the class |
| Weeks 15-16 | Phase IV | Transfer of the responsibility from teacher candidate back to mentor teacher |

This is a field-based course. General expectations can be found in the NAUTeach Apprentice Teaching Handbook. The following expectations also hold for this course:

- **Attendance:** You are expected to be in the schools every day during the secondary school term. Your schedule will follow that used in your teaching placement. Absences must be reported to your mentor teacher and your university facilitator.
- **Mentor Teacher:** Your mentor teacher will be responsible for the day to day supervision and support of your apprentice teaching experience.
- **Support from Master Teachers:** NAUTeach Master Teachers will observe you at least once during the semester. If you are having difficulties, more visits will be offered. The goal of NAUTeach is to provide you with the coaching required to ensure that you reach a demonstrated minimum level of competence upon completion of your apprentice teaching experience.
- **University Facilitator:** You will be observed a minimum of five times by a university facilitator. Your university facilitator will be in e-mail contact, observe your teaching, conduct follow-up conferences, and serve as a liaison between the university and the mentor teacher.

Assessment of Student Learning Outcomes: Apprentice teaching is a Pass/Fail Course. A passing grade in this course requires the Apprentice Teacher to accomplish all of the following elements.

*Signature assessment that must be successfully completed in order to earn an Institutional Recommendation for certification.

- **Apprentice Teaching:** Assume Apprentice Teacher responsibilities as outlined in the NAUTeach Apprentice Teaching Handbook.
- ***Mid-term Evaluation (NCTM Assessment 4, NSTA Assessment 4):** Earn an average score of "novice" or higher on all components of the midterm evaluation of teaching performance conducted by the mentor teacher and the university facilitator.
- ***Final Evaluation (NCTM Assessment 4, NSTA Assessment 4):** A score of "novice" or higher on all components of the final evaluation of teaching performance by the mentor teacher and the university facilitator.
- ***Teacher Development and Dispositions Rubric (NCATE Standard 1):** To be completed by your mentor teacher and university facilitator at midterm and at the end of the semester with a minimum score of "novice."

Grading System:

| Grade | Quality of Work |
|-------|--|
| Pass | All assessments of student learning outcomes are met at minimum standards. |
| Fail | One or more of the assessments of student learning outcomes are not met, or teaching responsibilities are not completed. |

Course Policies:

1. The teacher candidate must read and sign the form "On Becoming a Professional: Student Code of Conduct."
2. The teacher candidate must register for apprentice teaching by the last day to pay fees without cancellation of classes.
3. Attendance is required. During the apprentice teaching experience, the teacher candidate will be allowed five absences. This includes attendance at any events hosted by the University. As per the Student Handbook, only institutional excuses will be considered as "excused." More than five absences in the placement classroom (regardless of cause) may result in failure to complete apprentice teaching. The teacher candidate is expected to notify both their mentor teacher and University Facilitator prior to a missed day of apprentice teaching. The teacher candidate should work with their mentor teacher and University Facilitator to develop a suitable mechanism for communicating the intent to be absent. The teacher candidate with excessive absences may be reported to the Office of Student Services.
4. The teacher candidate may not substitute teach or receive compensation for apprentice teaching. However, the teacher candidate may receive compensation for working with extra-curricular activities while apprentice teaching.
5. Assignments and course requirements established by the mentor teacher, University Facilitator, and Field Experience Office are to be followed. Late work may impact a teacher candidate's evaluation and successful course completion.
6. Opportunities to "make-up" required evaluations might be given only in cases where the teacher candidate has properly notified the evaluator(s) involved prior to missing the evaluation. Make-up evaluations must be conducted within one week of their originally scheduled time.
7. The quality of work produced is expected to reflect the teacher candidate's best attempt. Written work must be word-processed and free of mechanical errors.
8. The teacher candidate is expected to honor the ethical, professional, and conduct guidelines specified in the document "On Becoming a Professional: Student Code of Conduct" in the *Handbook for Student Teaching*, and school and district policies.
9. The teacher candidate must adhere to professional expectations.
10. Housing is the responsibility of the teacher candidate. The COE Office of Student Services cannot pursue inquiries made regarding housing.
11. The Director of Student Services must approve any exception to these course requirements.
12. The University Facilitator and/or program advisor may include additional requirements for successful completion of student teaching.

NORTHERN ARIZONA UNIVERSITY POLICY STATEMENTS

<http://jan.ucc.nau.edu/academicadmin/plcystmt.html>

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.
2. New course effective beginning what term and year? (ex. Spring 2008, Summer 2008) *See effective dates schedule.* Spring 2009
3. College College of Engineering, Forestry & Natural Science 4. Academic Unit /Department Center for Science Teaching and Learning
5. Course subject/catalog number TSM 496C 6. Units/Credit Hours 1
7. Long course title Apprentice Teaching Seminar
(max 100 characters including spaces)
8. Short course title (max. 30 characters including spaces) Apprentice Teaching Seminar
9. Catalog course description (max. 30 words, excluding requisites).

Students reflect on their apprentice teaching experiences and examine contemporary critical issues in education. A teaching portfolio is produced as a synthesis of the NAU Teach program. Contains assessments that must be successfully completed in order to earn an Institutional Recommendation for certification.

10. Grading option:
Letter grade 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
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) Admission to Apprentice Teaching
15. Corequisites (must be completed **with** proposed course) TSM 495C Apprentice Teaching

16. Is the course needed for a new or existing plan of study (major, minor, certificate)? yes X no
 Name of plan? **BS ED Mathematics Secondary Education**

- BS ED Biology Secondary Education**
- BS ED Chemistry Secondary Education**
- BS ED Earth Science Secondary Education**
- BS ED General Science Secondary Education**
- BS ED Physics Secondary Education**

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 X
 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: Barbara Austin
 Molly Beauchman
 Sharon Cardenas
 Terry Crites
 Julie Gess-Newsome
 Shannon Guerrero
 Jeff Hovermill
 Mark James
 Janet McShane
 David Thompson
 Catherine Ueckert
 Deborah A. Wolf

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

According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to science and mathematics teacher shortages that already exist.

NAU is replicating a highly successful mathematics and science teacher certification program developed at the University of Texas at Austin. This course is one of eight courses in the new NAUTeach program sequence. NAUTeach is a science and mathematics-specific education program that will replace the existing general methods and most content-specific methods courses in the following B.S.Ed. degrees: Biology, Chemistry, Earth Science, General Science, Mathematics, and Physics.

This course is a capstone course for the BSEd majors in the sciences and mathematics. The focus of this capstone experience is to reflect on the apprentice teaching experience in the secondary classroom and to produce a teaching portfolio that synthesizes these reflections. The final portfolio represents your ability to accurately convey your subject matter knowledge to students, design hypotheses about student learning and collect and analyze data in order to modify instruction, and to effectively convey your reflections in writing.

| |
|----------------------------|
| For Official AIO Use Only: |
| Component Type |
| Consent |
| Topics Course |

25. Approvals

Julie Gess-Newsome
Julie Gess-Newsome, Director of the Center for Science Teaching and Learning
10/20/08
Date

William R. Middlehart
Chair of college curriculum committee
10/20/08
Date

[Signature]
Dean of college
10/20/08
Date

For Committees use only

Ben Bell
For University Curriculum Committee
12/2/08
Date

Action taken:

Approved as submitted

Approved as modified



NORTHERN ARIZONA UNIVERSITY

LIBERAL STUDIES PROPOSAL/DELETION FORM

CHECK THE APPROPRIATE BOX(ES)

Distribution Blocks

- This is a new course that I want to offer for Liberal Studies **Distribution Block** credit. A UCC New Course Proposal Form must also be submitted to the UCC.
- This is an existing course that is not currently approved for liberal studies **Distribution Block** credit, but I would like for it to be considered for the next catalog year.
- This course is already approved for liberal studies **Distribution Block** credit, but I would like to realign it with the liberal studies changes that took affect in fall 2007.
- This course is already approved for liberal studies **Distribution Block** credit, but I would like to make substantial changes to the syllabus, so I am submitting it for re-approval. *Provide details about the change(s) here or on the attached syllabus.* A UCC Course Change Proposal Form may also need to be submitted to the UCC.
- This course is already approved for liberal studies **Distribution Block** credit, but I would like to delete it from the list of approved courses.

If the course is to be deleted from the catalog a UCC Course Deletion Form also must be submitted to the UCC

Junior Level Writing

- This is a new course that I want to offer as a **Junior Level Writing** course. A UCC New Course Proposal Form must also be submitted to the UCC.
- This is an existing course that is not currently approved as a **Junior Level Writing** course, but I would like for it to be considered for the next catalog year.
- This course is already approved as a **Junior Level Writing** course, but I would like to make substantial changes to the syllabus, so I am submitting it for re-approval. *Provide details about the change(s) here or on the attached syllabus.* A UCC Course Change Proposal Form may also need to be submitted to the UCC.
- This course is already approved as a **Junior Level Writing** course, but I would like to delete it from the list of approved courses. *If the course is to be deleted from the catalog a UCC Course Deletion Form also must be submitted to the UCC*

Senior Capstone

- This is a new course that I want to offer as a **Senior Capstone**. A UCC New Course Proposal Form must also be submitted to the UCC.
- This is an existing course that is not currently approved as a **Senior Capstone** course, but I would like for it to be considered for the next catalog year.
- This course is already approved as a **Senior Capstone** course, but I would like to make substantial changes to the syllabus, so I am submitting it for re-approval. *Provide details about the change(s) here or on the attached syllabus.* A UCC Course Change Proposal Form may also need to be submitted to the UCC.
- This course is already approved as a **Senior Capstone** course, but I would like to delete it from the list of approved courses. *If the course is to be deleted from the catalog a UCC Course Deletion Form also must be submitted to the UCC*
- Other.** Please explain.

PROVIDE THE FOLLOWING INFORMATION

Course subject/catalog number: **TSM496C**

Course title: **Apprentice Teaching Seminar**

Department chair name, phone, email: **Julie Gess-Newsome, Center for Science Teaching and Learning, 523-9527, Julie.gess-newsome@nau.edu**

College contact name, phone, email: **Debra Larson, 523-1757, debra.larson@nau.edu**

SELECT ONE DISTRIBUTION BLOCK

If a topics course, must apply to ALL sections.

- Aesthetic and Humanistic Inquiry
- Cultural Understanding
- Science/Applied Science
- Social and Political Worlds

SELECT ONE ESSENTIAL SKILL TO BE ASSESSED

- Critical Thinking
- Effective Writing
- Effective Oral Communication
- Scientific Reasoning
- Quantitative Reasoning

Is this a topics course? yes no

Approvals:

Department chair: Julia Gen-Newsome 10/20/08

Department curriculum committee chair: Wayne A. Riddick 10/20/08

Dean of college: [Signature] 10/20/08

When completed, please save this proposal (with the syllabus pasted below) as a .doc file and email it as an attachment to shelly.pleasants@nau.edu. Please also send a hard copy, complete with signatures, to Shelly Pleasants at NAU Box 4122.

Date _____ Approved as submitted Approved as modified

For Liberal Studies Committee

Date _____ Approved as submitted Approved as modified

For University Curriculum Committee

*The syllabus below represents a **master syllabus**, which means that it reflects elements common among all sections of this course.*

For topics courses, the syllabus below identifies the student learning outcomes that will be found in all topic syllabi, and also explains by what methods student learning outcomes will be assessed in all topic syllabi offered under this course number.

Click [here](#) for a syllabus template.

Education Unit Vision: To develop educational leaders who create tomorrow's opportunities.

Education Unit Mission: To prepare competent and committed professionals who will make positive differences for children, young adults, and others in schools.

TSM 496C: Apprentice Teaching Seminar

Semester

1 credit hour

General Information:

- Instructor's Name:
- Office address:
- Office Hours:
- Email:
- Phone:
- CSTL Phone: 523-7160

Course Prerequisites: Admission to Apprentice Teaching and department consent.

Course Description: Students reflect on their apprentice teaching experiences and examine contemporary critical issues in education. A teaching portfolio is produced as a synthesis of the NAU Teach program. This course contains signature assessments that must be successfully completed in order to earn an Institutional Recommendation for certification.

This course is a capstone course for the BSEd majors in the sciences and mathematics. The focus of this capstone experience is to reflect on the apprentice teaching experience in the secondary classroom and to produce a teaching portfolio that synthesizes these reflections. The final portfolio represents your ability to accurately convey your subject matter knowledge to students, design hypotheses about student learning and collect and analyze data in order to modify instruction, and to effectively convey your reflections in writing.

Student Learning Expectations/Outcomes for this Course: *Students will be able to:*

1. Reflect on teaching practices including the creation of a classroom environment based on respect and rapport that fosters a positive climate for learning, equity, and excellence.
2. Review and evaluate personal performance in order to improve teaching practices through reflection.
3. Develop and nurture current professional knowledge of the teaching/learning process.
4. Provide evidence of student learning through the design and implementation of instruction that makes use of effective communication techniques, is based on student prior knowledge, actively engages students in the learning process, and provides timely high-quality feedback.
5. Reflect on the roles and responsibilities and adhere to legal and ethical requirements of the profession.
6. Provide evidence of meeting the Arizona Professional Teaching Standards by taking the AEPA Secondary Professional Knowledge exam.

Standards addressed in this course:

- o *National Council of Teachers of Mathematics Standards addressed in this course:*
 - 3.4, 6.1, 7.1-7.6, 8.1-8.4, 8.7-8.9, 16.2, 16.3
 - <http://www.nctm.org/standards/default.aspx?id=58>

- *National Science Teacher Association Standards addressed in this course:*
 - 1a-1d, 5a-5f, 6a, 6b, 8a-8c, 9b-9c, 10a-10d
 - http://www.nap.edu/openbook.php?record_id=4962
- *Arizona Professional Teaching Standards addressed in this course:*
 - 1.1-1.13, 2.1-2.10, 3.1-3.15, 4.1-4.5, 5.1-5.5, 6.1-6.3, 6.5, 7.1b-7.5, 8.1-8.13, 9.1, 9.2, 9.5
 - <http://www.ade.state.az.us/certification/downloads/Teacherstandards.pdf>

Course Structure/Approach: Data collection, small group discussion, reflection, and writing.

Textbook and Required Materials:

- Subscription to TaskStream.
- NAUTeach Apprentice Teaching Handbook.
- Useful references include:

ADE. (2008). Arizona Department of Education. *Arizona academic standards: Mathematics standard articulated by grade level and Science standard articulated by grade level.* Available online at <http://www.ade.az.gov/>

AZ K-12 Center. (2007). *Standards for professional excellence.* Arizona K-12 Center, Phoenix, AZ. <http://www.azk12.org>

AZ K-12 Center. (2007). *Continuum guide for teacher development.* Arizona K-12 Center, Phoenix, AZ. <http://www.azk12.org>

Jones, F. H., & Jones, B. (2000). *Tools for teaching.* Fred Jones Inc. <http://www.fredjones.com>.

NCTM. (1991). *Professional standards for teaching mathematics.* Reston, VA. NCTM. Available online at <http://my.nctm.org/ebusiness/ProductCatalog/product.aspx?ID=13201/>.

NSES. (1996). National Research Council. *National Science Education Standards.* Washington DC: National Academy Press. Available online at http://www.nap.edu/catalog.php?record_id=4962

Course Outline:

| Week | Topic |
|------------|--|
| Week 1-12 | Weekly discussions and reflections on classroom practices. Analysis of classroom data. Take the AEPA Secondary Professional Knowledge exam. Creation and review of draft segments of the final portfolio. |
| Week 13-15 | Portfolio submission, feedback, and evaluation. |

Assessment of Student Learning Outcomes:

*Signature assessments that must be successfully completed in order to earn an Institutional Recommendation for certification.

| Assessments: | Percent |
|--|---------|
| Weekly Reflections: Each week you will be assigned a specific reflection question that will assist you in completing the elements needed for your final portfolio. Each reflection must meet minimum criteria in order to be included in your portfolio. | 20% |
| Final Teaching Portfolio: Submission of final portfolio. All elements of this assignment must meet or exceed the "novice" level on the scoring rubric in order to successfully pass this assignment and be recommended for certification. The Teaching Portfolio will at a minimum contain the following: <ul style="list-style-type: none"> • School Culture Assignments (20%) • *Significant Unit of Instruction (NSTA Assessment 5, NCTM Assessment 5): (50%) This unit allows you to make evident your thinking process as you plan instruction and provides evidence that you are ready to begin your professional | 70% |

| | |
|---|-------------|
| career as an educator. The unit will consist of the following elements: <ul style="list-style-type: none"> Assessing prior knowledge, collecting pre-assessment information Planning instruction (include the specific standards and objectives targeted) Designing instruction Elaborating on instructional decisions Planning and implementing assessment and documenting results Analyzing assessment data Reflection: A final 3-5 page reflective summary of the lessons evincing how your teaching impacted student learning. | |
| *AEPA Secondary Professional Knowledge exam (NCATE Standard 1): You must provide evidence that you have taken this exam. Evidence consists of proof of registration and/or your exam report. | 10% |
| Percentage Possible: | 100% |

Grading System:

| % of Points | Grade | Quality of Work |
|-------------|-------|---|
| 90 - 100 | A | Exemplary: All aspects of the work are complete and well above the minimum level specified. Well written and free of typographical and grammatical errors. Application of concepts presented in class. Evidence of careful thought and reflection. Reflective application of assignment to future teaching and learning. |
| 80 - 89 | B | Well done: Two or more of the above elements missing or of lesser quality. |
| 70 - 79 | C | Acceptable: The task was completed at the minimum level specified. Most aspects of the assignment indicated a focus on task completion as opposed to careful reflection, analysis, and/or application. |
| 60 - 69 | D | Not acceptable: Several aspects of the assignment are missing or completed at a sub-standard level. |
| Below 60 | F | Failing: Assignment not completed. |

Course Policies:

- Attendance and Participation:** Regular attendance and active participation at all class sessions is required and will greatly enhance the student's ability to be successful. Regular attendance is expected with no more than 2 unexcused absences from class for the semester. Preparation includes, but is not limited to, coming to class prepared with the required assignments completed and engaging in thoughtful and reflective class discussion and activities. Violation of the attendance and participation policy can result in a grade reduction or failing the course.
- Written Assignments:** All assignments completed outside of class must be typed and be professional in appearance. Writing errors, such as spelling, punctuation, grammatical errors, etc., will be taken into consideration and may lower the grade. Students are permitted and encouraged to proofread each other's assignments.
- Late Assignments:** All assignments must be submitted **on or before** the due date. If an assignment is turned in late, points will be reduced by 10% for each day late up to a reduction of 50%. After 5 days (50% off), work turned in can receive only a maximum of half credit.
- Statement on plagiarism and cheating:** Plagiarism is considered as a willful act when a person knowingly uses the work of others and attempts to present it as his/her own. This academic dishonesty will not be permitted. Appropriate measures, as stated in the NAU Student Handbook, will be applied.

NORTHERN ARIZONA UNIVERSITY POLICY STATEMENTS
<http://jan.ucc.nau.edu/academicadmin/plcystmt.html>

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

1. College CEFNS

2. Academic Unit/Department Physics and Astronomy

3. Academic Plan Name BSEd: Physics - Secondary Education (Extended Major)

4. Subplan (if applicable)? _____

5. Effective Date FALL 2009

6. Is this proposal for a :

| | | |
|--------------------------------------|---|---|
| <input type="checkbox"/> New Plan | <input checked="" type="checkbox"/> Plan Change | <input type="checkbox"/> Plan Deletion |
| <input type="checkbox"/> New Subplan | <input type="checkbox"/> Subplan Change | <input type="checkbox"/> Subplan Deletion |

7.

For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the *current* on line 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.

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.)

B.S. ED. PHYSICS: SECONDARY EDUCATION (EXTENDED MAJOR)

This degree is intended for secondary education students whose primary emphasis area is physics. This academic plan also prepares you to obtain additional certification in mathematics or chemistry. This plan meets or exceeds the No-Child-Left-Behind "highly qualified" national and state standards.

To earn this degree, complete at least 120 units of coursework, which we describe in the sections that follow:

- at least 35 units of liberal studies requirements Required courses in this major also satisfy 16 of your 35 liberal studies units. See you advisor for details. Be aware that you may not use courses with a PHY prefix to satisfy these liberal studies requirements.
- at least 41 units of major requirements
- at least 12 or 14 units to meet the mathematics or chemistry emphasis, respectively
- at least 31 units of teacher-preparation requirements
- elective courses, if needed, to reach

B.S. ED. PHYSICS: SECONDARY EDUCATION (EXTENDED MAJOR)

This degree is intended for secondary education students whose primary emphasis area is physics. This academic plan also prepares you to obtain additional certification in mathematics or chemistry. This plan meets or exceeds the No-Child-Left-Behind "highly qualified" national and state standards.

To earn this degree, complete at least 120 units of coursework, which we describe in the sections that follow:

- at least 35 units of liberal studies requirements Required courses in this major also satisfy 16 of your 35 liberal studies units. See you advisor for details. Be aware that you may not use courses with a PHY prefix to satisfy these liberal studies requirements.
- at least ~~41~~ **38** units of major requirements
- at least 12 or 14 units to meet the mathematics or chemistry emphasis, respectively
- at least ~~31~~ **33** units of teacher-preparation requirements
- elective courses, if needed, to reach

an overall total of at least 120 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a [list of the available diversity courses](#).

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above). This academic plan includes 40 units of such upper-division courses. Because this plan is an extended major, no minor is required.

Additionally, you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.

Finally, please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least 120 units to graduate. Contact your advisor for details.

Also be aware that, for the B.S.Ed. degree, you must have the following:

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent) (If you don't receive a 3.0, you may complete an additional writing course, at the 200 level or

an overall total of at least 120 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a [list of the available diversity courses](#).

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~~Also be aware that, for the B.S.Ed. degree, you must have the following:~~

- ~~• a grade of at least B for the English foundation requirement (ENG 105 or equivalent) (If you don't receive a 3.0, you may complete an additional ENG writing course, at the 200 level~~

above, with at least a B, to meet this requirement.)

- a grade of at least C for the mathematics foundation requirement (generally MAT 110, 114, 125, or 155)

MAJOR REQUIREMENTS

Complete the following 41 units:

- PHY 161, 161L, 262, 262L, 263, 264, and 361 (17 units)
- AST 183/184L or 180/181 (4 units)
- BIO 100 (3 units)
- MAT 136 and 137 (8 units)
- SCI 461 (3 units)
- PHY 333W, which meets NAU's junior writing requirement (3 units)
- SCI 460C, which meets NAU's senior capstone requirement (3 units)

EMPHASIS REQUIREMENTS

Students may choose either chemistry emphasis or mathematics emphasis depending on their preference for additional certification.

Physics/Chemistry:

or above, with at least a B, to meet this requirement.)

- a grade of at least C for the mathematics foundation requirement (~~generally MAT 110, 114, 125, or 155~~) **(MAT 125 or 125H, 136 or 136H, or equivalent)**
- **A grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.**

MAJOR REQUIREMENTS

Complete the following ~~41~~ **38** units. **You may not count more than one D toward the major and emphasis requirements for this degree.**

- PHY 161, 161L, 262, 262L, 263, 264, and 361 (17 units)
- AST 183/184L or 180/181 (4 units)
- BIO 100 (3 units)
- MAT 136 **or 136H** and 137 (8 units)
- ~~SCI 461 (3 units)~~
- PHY 333W, which meets NAU's junior writing requirement (3 units)
- **PHI 359 or 359H (3 units)**
- ~~SCI 460C, which meets NAU's senior capstone requirement (3 units)~~

EMPHASIS REQUIREMENTS

Students may choose either chemistry emphasis or mathematics emphasis depending on their preference for additional certification.

Physics/Chemistry:

- CHM 151, 151L, 152, 152L, 230, 230L, and 295 (14 units)

Physics/Mathematics:

- MAT 301, 401 or 402, 365 or 320W, 226 or STA 270 (12 units)

Note: It is highly recommended that all new students take our 1 credit hour first year seminar (PHY 103).

TEACHER-PREPARATION REQUIREMENTS

Complete 31 units of professional courses offered by the College of Education to qualify for certification to teach physical science in Arizona and most other states.

Click here for more information about [Teacher Preparation in Secondary Education](#). You should also receive advisement from the College of Education for this part of your academic plan.

Please note that, for this major, you substitute SCI 308 for ECI 308. You should also receive advisement from the College of Education for this part of your academic plan.

ADD NEW ->

- CHM 151, 151L, 152, 152L, 230, 230L, and 295 (14 units)

Physics/Mathematics:

- ~~MAT 301, 401 or 402, 365 or 320W, 226 or STA 270 (12 units)~~
- **MAT 185 (3 units)**
- **MAT 401 or 402 (3 units)**
- **MAT 365 or 320W (3 units)**
- **One of the following: MAT 226, STA 270 or STA 275 (3 units)**

Note: It is highly recommended that all new students take our 1 credit hour first year seminar (PHY 103).

~~TEACHER-PREPARATION REQUIREMENTS~~

~~Complete 31 units of professional courses offered by the College of Education to qualify for certification to teach physical science in Arizona and most other states.~~

~~Click here for more information about [Teacher Preparation in Secondary Education](#). You should also receive advisement from the College of Education for this part of your academic plan.~~

~~Please note that, for this major, you substitute SCI 308 for ECI 308. You should also receive advisement from the College of Education for this part of your academic plan.~~

SCIENCE AND MATHEMATICS TEACHER- PREPARATION REQUIREMENTS

You must complete the following 33 units of professional courses to qualify for certification to teach mathematics in Arizona and most other states:

- **TSM 101 and 102 (2 units)**
- **TSM 300, 350, 404, 450 (12 units)**
- **TSM 495C, TSM 496C (13 units)**

- **BME 300 and 437 (6 units)**

TSM 495C and TSM 496C meet NAU's senior capstone requirement. You must have an academic advisor in both your major department and in the NAU Teach program for the teacher-preparation portion of the plan.

[Click here for more information about Science and Mathematics Teacher Preparation in Secondary Education.](#)

**[Click here for more information about the NAU Teach Program:](#)
<http://www4.nau.edu/cstl/NAU Teach/>**

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.

You may take these remaining courses from any academic areas, using these courses to pursue your specific interests and goals. We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for [Physics undergraduate courses](#), here for [Astronomy undergraduate courses](#), and here for [Physical Sciences undergraduate courses](#).

Click here for [Physics and Astronomy faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

To teach in grades 7 through 12, you must have a teaching major and a teaching minor

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.

You may take these remaining courses from any academic areas, using these courses to pursue your specific interests and goals. We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for [Physics undergraduate courses](#), here for [Astronomy undergraduate courses](#), and here for [Physical Sciences undergraduate courses](#).

Click here for [Physics and Astronomy faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.

In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):

- EDF 200 (3 units)
- BME 437 (3 units)
- ECI 308, 322, 450, and 465 (10 units)
- EPS 325 (3 units)
- in your senior year, ECI 495C, which meets NAU's senior capstone requirement (12 units)

You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special exam.

You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.

Click here for more information about our [ECI undergraduate courses](#), [graduate courses](#), and [faculty](#).

~~To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher education plan:~~

~~-~~

~~In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):~~

- ~~• EDF 200 (3 units)~~
- ~~• BME 437 (3 units)~~
- ~~• ECI 308, 322, 450, and 465 (10 units)~~
- ~~• EPS 325 (3 units)~~
- ~~• in your senior year, ECI 495C, which meets NAU's senior capstone requirement (12 units)~~

~~You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special exam:~~

~~-~~

~~You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.~~

~~-~~

~~Click here for more information about our [ECI undergraduate courses](#), [graduate courses](#), and [faculty](#).~~

ADD NEW ->

(under revision)

SCIENCE AND MATHEMATICS TEACHER PREPARATION SECONDARY EDUCATION

The NAUTeach program prepares secondary science and mathematics teachers for certification to teach in grades 7 through 12. Students pursuing this degree will earn a major in their content area and will be eligible for secondary certification in Arizona. The following degrees are included in this program:

- B.S.Ed. in Biology Secondary Education (Extended major)
- B.S.Ed. in Chemistry Secondary Education (Extended major)
- B.S.Ed. in Earth Science Secondary Education (Extended major)
- B.S.Ed. in Mathematics Secondary Education
- B.S.Ed. in Physics Secondary Education (Extended major)

You must have an academic advisor in your major department. In addition, you must meet with an advisor in the NAUTeach program for the teacher-preparation portion of your plan.

Click here for more information about the NAUTeach Program:

<http://www4.nau.edu/cstl/NAUTeach/>

NAUTeach Program Admission:

In order to take NAUTeach courses beyond TSM 300, you must be admitted to the NAUTeach Program. Program acceptance is required before enrolling in TSM 350.

Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or

English foundation requirement (ENG 105 or equivalent). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.

- a grade of at least C for the Mathematics foundation requirement (MAT 125 or 125H, 136 or 136H, or equivalent)
- completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAUTeach program application form.

Admission to Apprenticeship Teaching: In order to apply for apprenticeship teaching, you must meet the following requirements:

- Complete and submit the NAUTeach Apprenticeship Teaching Application.
- Provide evidence that all degree courses will be completed by the time you enroll in TSM 495C and 496C.
- Have a cumulative 2.5 grade point average in all NAU coursework.
- ~~● Complete all TSM courses with a grade of C or better.~~
- ~~● Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students must also pass signature assessments in MAT 401 and 402.~~
- Receive an acceptable evaluation of your initial portfolio.
- Take the appropriate AEPA Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Recommended during 6th term. Earth Science majors need to earn a grade of C or better in GLG 445C instead of attempting the AEPA.

(Note: Many science majors may earn a second endorsement by passing the General Science AEPA exam.)

Apprentice Teaching: The Apprentice Teaching field experience (TSM 495C) and Seminar (TSM 496C) meets NAU's senior capstone requirement (13 units). To participate in these courses you must:

- Be admitted to Apprentice Teaching.
- Complete all TSM courses (except TSM 495C and 496C) with a grade of C or better.
- Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students must also pass signature assessments in MAT 401 and 402.

Completion of Program: In order to graduate from the NAU Teach program, you must pass TSM 495C, receive a grade of C or better in TSM 496C (based on the successful completion of all signature assessments), and have a grade point average of at least 2.5 in all NAU coursework.

Certifying to Teach in Arizona: In order to gain certification in Arizona to teach mathematics or science, you must meet the following:

- Evidence that you have satisfied the Arizona and Federal Constitution proficiency requirement through special test OR completion of POS 220 OR completion of POS 110 and 241.
- You must pass both the AEPA Secondary Professional Knowledge test and the Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Earth Science majors meet this requirement through earning a grade

of C or better in GLG 445C).

| Freshman Year | | | | | |
|----------------------|--|---|----------------------|-------------------------------------|---|
| 1 st term | | | 2 nd term | | |
| PHY 161 | University Physics I | 3 | PHY 262 | University Physics II | 3 |
| PHY 161L | University Physics I Lab | 1 | PHY 262L | University Physics II Lab | 1 |
| MAT 136 | Calculus I (SCI: SAS) | 4 | MAT 137 | Calculus II (FNRO) | 4 |
| ENG 105 | Critical Reading and Writing (FNRO) | 4 | TSM 102 | Step 2: Inquiry-Based Lesson Design | 1 |
| TSM 101 | Step 1: Inquiry Approaches to Teaching | 1 | LS/DIV | Liberal Studies/Diversity*** | 3 |
| PHY 103 | First Year Seminar | 1 | LS | Liberal Studies* | 3 |
| Total units | | | Total units | | |
| 14 | | | 15 | | |

| Sophomore Year | | | | | |
|----------------------------|---------------------------------|-----|----------------------|----------------------------------|-----|
| 3 rd term | | | 4 th term | | |
| PHY 263 | University Physics III | 3 | PHY 264 | Electronics for Science Students | 3 |
| BIO 100 | Principles of Biology (SCI:SAS) | 3 | ME | Major Elective ** | 3-4 |
| ME | Major Elective ** | 3-5 | TSM 350 | Classroom Interactions | 3 |
| TSM 300 | Knowing & Learning | 3 | LS/DIV | Liberal Studies/Diversity *** | 3 |
| GE | General Elective | 3 | GE | General Elective | 3 |
| Apply to NAU Teach Program | | | | | |
| Total units | | | Total units | | |
| 15-17 | | | 15-16 | | |

| Junior Year | | | | | |
|----------------------|---------------------------------------|-----|---|-------------------|-----|
| 5 th term | | | 6 th term | | |
| ME | Major Elective ** | 1-3 | PHY 361 | Modern Physics | 3 |
| PHI 359 | Philosophy of Science (AHI) | 3 | PHY 333W | Advanced Lab | 3 |
| BME 300 | Intro to Structured English Immersion | 3 | ME | Major Elective ** | 4-5 |
| LS | Liberal Studies | 3 | TSM 404 | Research Methods | 3 |
| GE | General Elective | 3 | LS | Liberal Studies | 3 |
| | | | Attempt AEPA Physics Subject Knowledge Test | | |
| Total units | | | Total units | | |
| 13-15 | | | 16-17 | | |

| Senior Year | | | | | |
|-------------------------------|---|---|----------------------|---------------------|----|
| 7 th term | | | 8 th term | | |
| AST 180 or AST 183 | Introduction to Astronomy or Life in the Universe (SCI:LAB) | 3 | TSM 495C | Apprentice Teaching | 12 |
| AST 181 or AST 184L | Astronomy Lab (SCI: LAB) | 1 | TSM 496C | Seminar | 1 |
| BME 437 | SEI Methods in Secondary Schools | 3 | | | |
| TSN 450 | Project-Based Instruction | 3 | | | |
| LS | Liberal Studies | 3 | | | |
| GE | General Elective | 3 | | | |
| Apply for Apprentice Teaching | | | | | |
| Total units | | | Total units | | |
| 16 | | | 13 | | |
| Total: 120 | | | | | |

Liberal Studies Distribution blocks

| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 35 total |
|---------------|---------------|--------------|--------------------------------------|--------------------------------------|
| PHI 359 | * | | MAT 136 (4) | |
| | | | AST 180 or 184 & AST 181 or 184L (4) | BIO 100 (3) |

PROGRAM INFORMATION

A minimum of 120 units are required for this degree. No more than one D is allowed in the major & emphasis requirements.

* PSY 101 (SPW) recommended.

** Major electives include selecting either the chemistry or math emphasis (14 units)

- Chemistry: term 3 - CHM 151, 151L, term 4 – CHM 152, 152L, term 5 – CHM 295, and term 6 - CHM 230, 230L
- Mathematics: MAT 226, STA 270 or STA 275;
MAT 185;
MAT 401 or 402;
MAT 365 or 320W
plus two units of general electives.

*** Take a Liberal Studies course that also satisfies a diversity requirement.

NAUTEACH Program Admission:

In order to take NAUTEACH courses beyond TSM 300, you must be admitted to the NAUTEACH Program. Program acceptance is required before enrolling in TSM 350. Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card OR verification of application for fingerprint card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or ENG 101 & 102). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125, 136, or equivalent).
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAUTEACH program application form.

You must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. See catalog for additional information regarding application for Apprentice Teaching.

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/LScourseList.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>
 - 30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU
- English placement: <http://www.nau.edu/comp/placement.html>
- Math placement: : <http://www.cefns.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml>

CONTACT INFORMATION

Department of Physics and Astronomy
Building 19, Room 209
Phone: 928-523-2661
Department Chair: David Cornelison
Phone: 928-523-7641
EMAIL: David.Cornelison@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

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.
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.
 - 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

Learning outcomes for the B.S.Ed. program are specified by NCATE. They include the application of the following learning outcomes to the science classroom: Content Knowledge, Nature of Science, Inquiry, Science-Technology-Society Issues, General Skills of Teaching, Curriculum, Science in the Community, Assessment, Safety and Welfare, Professional Growth, Technology, and Diversity.

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

There is a critical shortage of secondary science and mathematics teachers throughout the nation and especially in Arizona. According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to current science and mathematics teacher shortages that already exist.

NAU has been selected to receive grant monies for the purpose of replicating a highly successful secondary teacher preparation program for mathematics and science teachers that has been developed by the University of Texas at Austin. Students who complete the NAU Teach Program requirements will complete a series of courses that will replace the current education courses required in the B.S.Ed. degrees.

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

Presently, NAU graduates about a dozen mathematics and science secondary teachers each year. The goal of the NAU Teach Program is to increase this number to 60 or more. Two master teachers have already been hired and temporary space has been provided in the Chemistry Building. As the number of students in the NAU Teach Program increases, additional master teachers, content teachers, and support staff will be hired and additional space will be needed. This increase in staffing and space has been approved by the President's office and will be initially funded by grant funds, then to be replaced by permanent state funds (as agreed to by the President in an MOU with the granting agency).


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.


This plan will only affect B.S.Ed. degrees in secondary science and mathematics. The addition of PHI 359, Philosophy of Science, will be required. A letter of support from the Department of Philosophy is attached.

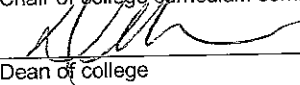
14. Will present library holdings support this academic plan/subplan?

Yes, the materials, texts, and supplemental readings for all new courses in the NAU Teach Program are all available online, through the Center for Science Teaching and Learning, the Department of Mathematics and Statistics, and the Cline Library.

Certifications

 10-20-08
Department Chair/ Unit Head (if appropriate) Date

 10/20/08
Chair of college curriculum committee Date

 10/20/08
Dean of college Date

For committee use only

 12/2/08
For University Curriculum Committee Date

Action taken: approved as submitted approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

| | |
|---|---|
| <p>1. College <u>CEFNS</u></p> <p>3. Academic Plan Name <u>B.S.Ed. Biology Secondary Education (Extended Major)</u></p> <p>5. Effective Date <u>FALL 2009</u></p> <p>6. Is this proposal for a : <input type="checkbox"/> New Plan</p> <p style="padding-left: 100px;"><input type="checkbox"/> New Subplan</p> | <p>2. Academic Unit/Department <u>Biology</u></p> <p>4. Subplan (if applicable)? _____</p> <p><input checked="" type="checkbox"/> Plan Change</p> <p><input type="checkbox"/> Subplan Change</p> <p><input type="checkbox"/> Plan Deletion</p> <p><input type="checkbox"/> Subplan Deletion</p> |
|---|---|

7.

For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the *current* on line 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.

B.S. ED. BIOLOGY SECONDARY EDUCATION (EXTENDED MAJOR)

If you wish to teach in the secondary schools, you may wish to consider this extended degree. To earn this degree, complete at least 120 units of coursework, which we describe in the sections that follow:

- at least 35 units of liberal studies requirements Be aware that you may not use courses with a BIO prefix to satisfy these liberal studies requirements.
- at least 75 units of major requirements
- at least 31 units of teacher-preparation requirements
- elective courses, if needed, to reach an overall total of at least 120 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in

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.)

B.S. ED. BIOLOGY SECONDARY EDUCATION (EXTENDED MAJOR)

If you wish to teach in the secondary schools, you may wish to consider this extended degree. To earn this degree, complete at least 120 units of coursework, which we describe in the sections that follow:

- at least 35 units of liberal studies requirements. Be aware that you may not use courses with a BIO prefix to satisfy these liberal studies requirements.
- at least ~~75~~ **71** units of major requirements
- at least ~~31~~ **33** units of teacher-preparation requirements
- elective courses, if needed, to reach an overall total of at least 120 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and

global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a [list of the available diversity courses](#).

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

In addition, be aware that you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.

Finally, please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least 120 units to graduate. Contact your advisor for details.

Also be aware that, for the B.S.Ed. degree, you must have the following:

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent) (If you don't receive a 3.0, you may complete an additional writing course, at the 200 level or above, with at least a B, to meet this requirement.)
- a grade of at least C for the mathematics foundation requirement (generally MAT 110, 114, 125, or 155)

one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a [list of the available diversity courses](#).

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

~~In addition, be aware that you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.~~

Finally, Please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least 120 units to graduate. Contact your advisor for details.

Also be aware that, for the B.S.Ed. degree, you must have the following:

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent) (If you don't receive a 3.0, you may complete an additional **ENG** writing course, at the 200 level or above, with at least a B, to meet this requirement.)
- a grade of at least C for the mathematics foundation requirement (~~generally MAT 110, 114, 125, or 155~~) (**MAT 125 or 125H, 136 or 136H, or equivalent**)
- **A grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at**

MAJOR REQUIREMENTS

Complete the following 75 units of biology and science support courses.

Biology Courses

Complete at least the following 40 units with a grade of C or better in each course:

- BIO 181:181L and 182 (8 units)
- BIO 326 and 326LW, which meets NAU's junior writing requirement (4 units)
- BIO 340 and 344 (6 units)
- BIO 435C and 430C (5 units)

- 4-8 units in one of the following combinations of courses:

BIO 425C and 425L

or BIO 201 and 202

- at least 3 units from BIO 284, 374, 410, 414, 415, 426C, 426L, 431, 517, 536, and 570

NAU.

MAJOR REQUIREMENTS

Complete the following ~~75~~**71** units of biology and science support courses.

Biology Courses

Complete the following 40 units with a grade of C or better in each course:

- BIO 181:181L **or 181H:181L** and 182 **or 182H** (8 units)
- BIO 326 and 326LW, which meets NAU's junior writing requirement (4 units)
- BIO 340 and 344 (6 units)
- BIO 435C and ~~430C~~ (5 units) **(3 units)**

- ~~• 4-8 units in one of the following combinations of courses:~~

~~BIO 425C and 425L~~

~~or BIO 201 and 202~~

- **Physiology Course Options:**
4 units in one of the following combinations of courses:

BIO 425C and 425L

or BIO 201 (If you elect

BIO 201, BIO 202 is

strongly encouraged for elective credit)

- **Botany Course Options:** at least 3 units from BIO 284, 374, 410, 414, 415, 426C, 426L, 431, 517, 536, and 570

- 6-10 units of additional coursework from:

any BIO courses, except BIO 100, 100L and 310 or any BIO recitation (R) courses

up to 3 units of BIO 300
 up to 6 units from BIO 408, 485, 497, and 498
 up to 6 units from FOR 403, 404, and 405 and CHM 360 or 461

Science Support Courses

Take the following 35 units:

- MAT 125 and STA 270 (7 units)
- CHM 151, 151L, 152, 152L, 230, and 230L (13 units)
- PHY 111 and 111L (4 units)
- SCI 308, 460C, and 461 (7 units)
- GLG 101 and 103 (4 units)

TEACHER-PREPARATION REQUIREMENTS

Complete 31 units of professional courses offered by the College of Education to qualify for certification to teach biology in Arizona and most other states.

Click here for more information about

- **12** units of additional coursework **to complete 40 units in the major. The following rules apply to course selection:**

- **Inclusions:** Any BIO course **not excluded or limited below.**
- **Exclusions:** BIO 100, 100L, 310, and BIO recitation (R) courses
- **Limitations:**
 up to 3 units of BIO 300
 up to 6 units from BIO 408, 485, 497, and 498
 up to 6 units from FOR 403, 404, and 405 and CHM 360 or 461

Science Support Courses

Take the following ~~35~~ **31** units:

- MAT 125 **or 125H** and STA 270 (7 units)
- CHM 151, 151L, 152, 152L, 230, and 230L (13 units)
- PHY 111 and 111L (4 units)
- ~~SCI 308, 460C, and 461 (7 units)~~
- GLG 101 **or 101H** and 103 (4 units)
- **PHI 359 or 359H (3 units)**

~~TEACHER-PREPARATION REQUIREMENTS~~

~~Complete 31 units of professional courses offered by the College of Education to qualify for certification to teach biology in Arizona and most other states.~~

-
[Click here for more information about Teacher Preparation in Secondary](#)

Teacher Preparation in Secondary Education . You should also receive advisement from the College of Education for this part of your academic plan.

Please note that these 31 units include ECI 495C, which meets NAU's senior capstone requirement. Also note that for the B.S.Ed. in biology and secondary education, you may substitute SCI 308 for ECI 308.

ADD NEW ->

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.

~~Education~~ . You should also receive advisement from the College of Education for this part of your academic plan.

~~Please note that these 31 units include ECI 495C, which meets NAU's senior capstone requirement. Also note that for the B.S.Ed. in biology and secondary education, you may substitute SCI 308 for ECI 308.~~

SCIENCE AND MATHEMATICS TEACHER-PREPARATION REQUIREMENTS

You must complete the following 33 units of professional courses to qualify for certification to teach mathematics in Arizona and most other states:

- **TSM 101 and 102 (2 units)**
- **TSM 300, 350, 404, 450 (12 units)**
- **TSM 495C, TSM 496C (13 units)**
- **BME 300 and 437 (6 units)**

TSM 495C and TSM 496C meet NAU's senior capstone requirement. You must have an academic advisor in both your major department and in the NAUTeach program for the teacher-preparation portion of the plan.

Click here for more information about Science and Mathematics Teacher Preparation in Secondary Education.

Click here for more information about the NAUTeach Program:
<http://www4.nau.edu/cstl/NAUTeach/>

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.

You may take these remaining courses from any academic area, using these courses to pursue your specific interests and goals. We encourage you to consult with the Biology Advisement Center to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for information about our Biology [undergraduate courses](#) and [faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.

In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):

- EDF 200 (3 units)
- BME 437 (3 units)
- ECI 308, 322, 450, and 465 (10 units)
- EPS 325 (3 units)

You may take these remaining courses from any academic area, using these courses to pursue your specific interests and goals. We encourage you to consult with the Biology Advisement Center to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for information about our Biology [undergraduate courses](#) and [faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

~~To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.~~

~~In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):~~

- ~~• EDF 200 (3 units)~~
- ~~• BME 437 (3 units)~~
- ~~• ECI 308, 322, 450, and 465 (10 units)~~
- ~~• EPS 325 (3 units)~~

- in your senior year, ECI 495C, which meets NAU's senior capstone requirement (12 units)

You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special exam.

You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.

Click here for more information about our [ECI undergraduate courses](#), [graduate courses](#), and [faculty](#).

ADD NEW ->

- in your senior year, ECI 495C, which meets NAU's senior capstone requirement (12 units)

You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special exam.

You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.

Click here for more information about our [ECI undergraduate courses](#), [graduate courses](#), and [faculty](#).

SCIENCE AND MATHEMATICS TEACHER PREPARATION SECONDARY EDUCATION

The NAU Teach program prepares secondary science and mathematics teachers for certification to teach in grades 7 through 12. Students pursuing this degree will earn a major in their content area and will be eligible for secondary certification in Arizona. The following degrees are included in this program:-

- B.S.Ed. in Biology Secondary Education (Extended major)
- B.S.Ed. in Chemistry Secondary Education (Extended major)
- B.S.Ed. in Earth Science Secondary Education (Extended major)
- B.S.Ed. in General Science Secondary Education (Extended major)
- B.S.Ed. in Mathematics Secondary Education
- B.S.Ed. in Physics Secondary Education (Extended major)

You must have an academic advisor in your major department. In addition, you must meet with an advisor in the NAU Teach program for the teacher-preparation portion of your plan.

Click here for more information about the NAU Teach Program:

<http://www4.nau.edu/csti/NAU Teach/>

NAU Teach Program Admission:

In order to take NAU Teach courses beyond TSM 300, you must be admitted to the NAU Teach Program. Program acceptance is required before enrolling in TSM 350. Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or equivalent). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125 or 125H, 136 or 136H, or equivalent)
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.

- Completion of the NAUTeach program application form.

Admission to Apprenticeship Teaching: In order to apply for apprenticeship teaching, you must meet the following requirements:

- Complete and submit the NAUTeach Apprenticeship Teaching Application.
- Provide evidence that all degree courses will be completed by the time you enroll in TSM 495C and 496C.
- Have a cumulative 2.5 grade point average in all NAU coursework.
- ~~Complete all TSM courses with a grade of C or better.~~
- ~~Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students must also pass signature assessments in MAT 401 and 402.~~
- Receive an acceptable evaluation of your initial portfolio.
- Take the appropriate AEPA Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Recommended during 6th term. Earth Science majors need to earn a grade of C or better in GLG 445C instead of attempting the AEPA. (Note: Many science majors may earn a second endorsement by passing the General Science AEPA exam.)

Apprenticeship Teaching: The Apprenticeship Teaching field experience (TSM 495C) and Seminar (TSM 496C) meets NAU's senior capstone requirement (13 units). To participate in these courses you must:

- Be admitted to Apprenticeship Teaching.
- Complete all TSM courses (except TSM 495C and 496C) with a grade of C or better.

- Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students must also pass signature assessments in MAT 401 and 402.

Completion of Program: In order to graduate from the NAU Teach program, you must pass TSM 495C, receive a grade of C or better in TSM 496C (based on the successful completion of all signature assessments), and have a grade point average of at least 2.5 in all NAU coursework.

Certifying to Teach in Arizona: In order to gain certification in Arizona to teach mathematics or science, you must meet the following:

- Evidence that you have satisfied the Arizona and Federal Constitution proficiency requirement through special test OR completion of POS 220 OR completion of POS 110 and 241.
- You must pass both the AEPA Secondary Professional Knowledge test and the Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Earth Science majors meet this requirement through earning a grade of C or better in GLG 445C).

| Freshman Year | | | | | | | |
|-------------------------|--|-------------|----|-------------------------|-------------------------------------|-------------|----|
| 1 st term | | | | 2 nd term | | | |
| BIO 181/181L or BIO 182 | Unity of Life I or Unity Life II | 4 | | BIO 181/181L or BIO 182 | Unity of Life I or Unity Life II | 4 | |
| CHM 151 | General Chemistry I (SCI: LAB) | 4 | | ENG 105 | Critical Reading and Writing (FNRQ) | 4 | |
| CHM 151L | General Chemistry I Lab (SCI: LAB) | 1 | | CHM 152 | General Chemistry II (SCI: SAS) | 3 | |
| MAT 125 | Pre-calculus (FNRQ) | 4 | | CHM 152L | General Chemistry II Lab | 1 | |
| TSM 101 | Step 1: Inquiry Approaches to Teaching | 1 | | TSM 102 | Step 2: Inquiry-Based Lesson Design | 1 | |
| NAU 100 | Transition to College | 1 | | LS | Liberal Studies * | 3 | |
| | | Total units | 15 | | | Total units | 16 |
| Sophomore Year | | | | | | | |
| 3 rd term | | | | 4 th term | | | |

| | | | | | |
|------------------------------|--|---|---|--|----|
| BIO 340 | Genetics & Evolution | 3 | BIO 344 | Cellular and Molecular Biology | 3 |
| PHY 111 | General Physics I (SCI: SAS) | 3 | ME | Major Elective*** | 4 |
| PHY 111L | General Physics I Lab | 1 | CHM 230 | Fundamentals of Organic Chemistry (SCI: SAS) | 3 |
| STA 270 | Applied Statistic (SCI: SAS) | 3 | CHM 230L | Fundamentals of Organic Chemistry Lab | 1 |
| TSM 300 | Knowing & Learning | 3 | TSM 350 | Classroom Interactions | 3 |
| LS/DIV | Liberal Studies/Diversity ** | 3 | LS/DIV | Liberal Studies/Diversity ** | 3 |
| Apply to NAUTeach Program | | | | | |
| Total units | | | Total units | | |
| 16 | | | 17 | | |
| Junior Year | | | | | |
| 5th term | | | 6th term | | |
| BIO 326 | Ecology | 3 | BIO 435C | Evolutionary Biology | 3 |
| BIO 326LW | Ecology Lab | 1 | ME | Botany Elective*** | 3 |
| BIO 425C & 425L or BIO 201 | Animal Physiology & lab or Human Anatomy & Physiology I **** | 4 | GLG 101 | Physical Geology (SCI: SAS) | 3 |
| PHI 359 | Philosophy of Science (AHI) | 3 | GLG 103 | Physical Geology Lab | 1 |
| BME 300 | Intro to Structured English Immersion | 3 | BME 437 | SEI Methods in Secondary School | 3 |
| | | | TSM 404 | Research Methods | 3 |
| | | | Attempt AEPA Biology Subject Knowledge Test | | |
| Total units | | | Total units | | |
| 14 | | | 16 | | |
| Senior Year | | | | | |
| 7th term | | | 8th term | | |
| ME | Major Elective *** | 4 | TSM 495C | Apprentice Teaching | 12 |
| ME | Major Elective*** | 4 | TSM 496C | Seminar | 1 |
| TSM 450 | Project-Based Instruction | 3 | | | |
| LS | Liberal Studies | 3 | | | |
| LS | Liberal Studies | 3 | | | |
| Apply to Apprentice Teaching | | | | | |
| Total units | | | Total units | | |
| 17 | | | 13 | | |
| Total Credits: 124 | | | | | |

Liberal Studies Distribution blocks

| | | | | |
|---------------|---------------|--------------|--------------------|--------------------------------------|
| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 35 total |
| PHI 359 | * | | CHM 151 & 151L (5) | |
| | | | CHM 152 (3) | |

PROGRAM INFORMATION

A minimum of 120 units are required for this degree. Notice this 8 term plan has 124 units. A grade of C or better is required for the 40 units of biology and major electives.

Recitations are available and strongly encouraged for BIO 181, BIO 182, CHM 151, CHM 152, CHM 230 & PHY 111; however they are not required.

* PSY 101 (SPW) recommended

** Take a Liberal Studies course that also satisfies a Diversity requirement.

*** Major Electives include 15 units from the following:

- Botany Course Options: at least 3 units from BIO 284, 374, 410, 414, 415, 426C, 426L, 431, 517, 536, and 570
- 12 units of additional coursework to complete 40 units in the major. The following rules apply to course selection:
 - Inclusions: Any BIO course not excluded or limited below.
 - Exclusions: BIO 100, 100L, 310, and BIO recitation (R) courses
 - Limitations:
 - up to 3 units of BIO 300
 - up to 6 units from BIO 408, 485, 497, and 498
 - up to 6 units from FOR 403, 404, and 405 and CHM 360 or 461

**** If you take BIO 201, taking BIO 202 for a major elective is strongly recommended.

NAUTeach Program Admission:

In order to take NAUTeach courses beyond TSM 300, you must be admitted to the NAUTeach Program. Program acceptance is required before enrolling in TSM 350. Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card OR verification of application for fingerprint card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or ENG 101 & 102). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125, 136, or equivalent).
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAUTeach program application form.

You must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. See catalog for additional information regarding application for Apprentice Teaching.

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/L_Scourselist.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>
 - 30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU
- English placement: <http://www.nau.edu/comp/placement.html>
- Math placement: <http://www.cefns.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml>

CONTACT INFORMATION

Biology Advisement Center
Building 21, Room 144
Phone: 928-523-9304
Department Chair: Maribeth Watwood
Phone: 928-523-9322
EMAIL: Maribeth.Watwood@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

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.
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.
 - 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

Learning outcomes for the B.S.Ed. program are specified by NCATE. They include the application of the following learning outcomes to the science classroom: Content Knowledge, Nature of Science,

Inquiry, Science-Technology-Society Issues, General Skills of Teaching, Curriculum, Science in the Community, Assessment, Safety and Welfare, Professional Growth, Technology, and Diversity.

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

There is a critical shortage of secondary science and mathematics teachers throughout the nation and especially in Arizona. According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to current science and mathematics teacher shortages that already exist.

NAU has been selected to receive grant monies for the purpose of replicating a highly successful secondary teacher preparation program for mathematics and science teachers that has been developed by the University of Texas at Austin. Students who complete the NAU Teach Program requirements will complete a series of courses that will replace the current education courses required in the B.S.Ed. degrees.

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

Presently, NAU graduates about a dozen mathematics and science secondary teachers each year. The goal of the NAU Teach Program is to increase this number to 60 or more. Two master teachers have already been hired and temporary space has been provided in the Chemistry Building. As the number of students in the NAU Teach Program increases, additional master teachers, content teachers, and support staff will be hired and additional space will be needed. This increase in staffing and space has been approved by the President's office and will be initially funded by grant funds, then to be replaced by permanent state funds (as agreed to by the President in an MOU with the granting agency).

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.

This plan will only affect B.S.Ed. degrees in secondary science and mathematics. The addition of PHI 359, Philosophy of Science, will be required. A letter of support from the Department of Philosophy is attached.

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

Yes, the materials, texts, and supplemental readings for all new courses in the NAU Teach Program are all available online, through the Center for Science Teaching and Learning, the Department of Mathematics and Statistics, and the Cline Library.

Certifications

| | |
|--|-------|
| _____ | _____ |
| 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

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

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

Presently, NAU graduates about a dozen mathematics and science secondary teachers each year. The goal of the NAUTeach Program is to increase this number to 60 or more. Two master teachers have already been hired and temporary space has been provided in the Chemistry Building. As the number of students in the NAUTeach Program increases, additional master teachers, content teachers, and support staff will be hired and additional space will be needed. This increase in staffing and space has been approved by the President's office and will be initially funded by grant funds, then to be replaced by permanent state funds (as agreed to by the President in an MOU with the granting agency).

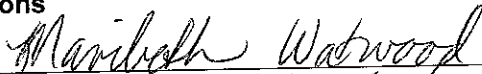
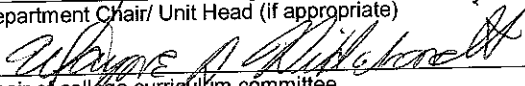
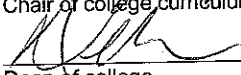
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This plan will only affect B.S.Ed. degrees in secondary science and mathematics. The addition of PHI 359, Philosophy of Science, will be required. A letter of support from the Department of Philosophy is attached.

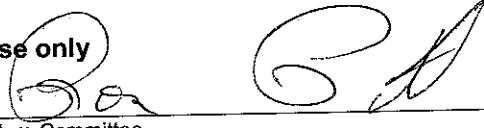
14. Will present library holdings support this academic plan/subplan?

Yes, the materials, texts, and supplemental readings for all new courses in the NAUTeach Program are all available online, through the Center for Science Teaching and Learning, the Department of Mathematics and Statistics, and the Cline Library.

Certifications

| | |
|---|----------|
|  | 10-21-08 |
| Department Chair/ Unit Head (if appropriate) | Date |
|  | 10/20/08 |
| Chair of college curriculum committee | Date |
|  | 10/20/08 |
| Dean of college | Date |

For committee use only

| | |
|---|----------|
|  | 10/20/08 |
| For University Curriculum Committee | Date |

Action taken: approved as submitted approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

| | |
|--|--|
| 1. College <u>CEFNS</u> | 2. Academic Unit/Department <u>Chemistry and Biochemistry</u> |
| 3. Academic Plan Name <u>BSEd in Chemistry Secondary Education (Extended Major)</u> | 4. Subplan (if applicable)? _____ |
| 5. Effective Date <u>FALL 2009</u> | |
| 6. Is this proposal for a : | <input type="checkbox"/> New Plan <input checked="" type="checkbox"/> Plan Change <input type="checkbox"/> Plan Deletion |
| | <input type="checkbox"/> New Subplan <input type="checkbox"/> Subplan Change <input type="checkbox"/> Subplan Deletion |

7.

For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the *current* on line academic catalog:

(<http://www4.nau.edu/ajio/AcademicCatalog/academiccatalogs.htm>)

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

For New Plans, leave this column blank.

B.S. ED. CHEMISTRY SECONDARY (EXTENDED MAJOR)

To earn this degree, complete at least 132 units of coursework, which we describe in the sections that follow:

- at least 35 units of liberal studies requirements Be aware that you may not use courses with a CHM prefix to satisfy these liberal studies requirements.
- at least 66 units of major requirements
- at least 31 units of teacher-preparation requirements
- elective courses, if needed, to reach an overall total of at least 132 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them

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.)

B.S. ED. CHEMISTRY SECONDARY ~~EDUCATION~~ (EXTENDED MAJOR)

To earn this degree, complete at least 132 units of coursework, which we describe in the sections that follow:

- at least 35 units of liberal studies requirements Be aware that you may not use courses with a CHM prefix to satisfy these liberal studies requirements.
- at least ~~66~~ **61** units of major requirements
- at least ~~31~~ **33** units of teacher-preparation requirements
- elective courses, if needed, to reach an overall total of at least ~~132~~ **120** units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose

carefully. Click here for a [list of the available diversity courses](#).

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

You should also be aware that you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.

Finally, please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least 132 units to graduate. Contact your advisor for details.

Also be aware that, for the B.S.Ed. degree, you must have the following:

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent)

(If you don't receive a 3.0, you may complete an additional writing course, at the 200 level or above, with at least a B, to meet this requirement.)

- a grade of at least C for the Mathematics foundation requirement (generally MAT 110, 114, 125, or 155)

them carefully. Click here for a [list of the available diversity courses](#).

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

~~You should also be aware that you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.~~

Finally, **Please** note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least ~~132~~ **120** units to graduate. Contact your advisor for details.

Also be aware that, for the B.S.Ed. degree, you must have the following:

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent)

(If you don't receive a 3.0, you may complete an additional **ENG** writing course, at the 200 level or above, with at least a B, to meet this requirement.)

- a grade of at least C for the Mathematics foundation requirement (~~generally MAT 110, 114, 125, or 155~~) (**MAT 125 or 125H, 136 or 136H, or equivalent**)
- **A grade point average of at least 2.5 in all of your NAU**

MAJOR REQUIREMENTS

Complete the following 66 units:

- CHM 151, 151L, 152, 152L, 235, 235L, 238, 238L, 320, 320L, 341, 350, and 461 (32 units)
- BIO 181:181L and 430C (6 units)
- MAT 136 and 137 (8 units)
- PHY 161, 161L, and 262 (7 units) (PHY 262L is not required.)
- GLG 101 and 103 (4 units)
- SCI 460C and 461 (6 units)
- one of CHM 300W or ENG 302W or 305W, each of which meets NAU's junior writing requirement (3 units)

TEACHER-PREPARATION REQUIREMENTS

Complete 31 units of professional courses offered by the College of Education to qualify for certification to teach chemistry in Arizona and most other states.

Click here for more information about [Teacher Preparation in Secondary Education](#). You should also receive advisement from the College of Education for this part of your academic plan.

Please note that you substitute SCI 308 for

coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.

MAJOR REQUIREMENTS

Complete the following **66 61** units.

- CHM 151, 151L, 152, 152L, 235, 235L, 238, 238L, 320, 320L, and 341. ~~, 350, and 461~~ (32 **26** units)
- **Complete 2 of the following courses: CHM 350, 360 or 440 (6 units)**
- BIO 181:181L **or 181H:181L** and 430C (6 **4** units)
- MAT 136 **or 136H** and 137 (8 units)
- PHY 161, 161L, and 262 (7 units) (PHY 262L is not required.)
- GLG 101 **or 101H** and 103 (4 units)
- ~~SCI 460C and 461 (6 units)~~
- one of CHM 300W or ENG 302W or 305W, each of which meets NAU's junior writing requirement (3 units)
- **PHI 359 or 359H (3 units)**

TEACHER-PREPARATION REQUIREMENTS

~~Complete 31 units of professional courses offered by the College of Education to qualify for certification to teach chemistry in Arizona and most other states.~~

Click here for more information about [Teacher Preparation in Secondary](#)

ECI 308. Also note that these 31 units include ECI 495C, which meets NAU's senior capstone requirement.

ADD NEW ->

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.

~~Education~~. You should also receive advisement from the College of Education for this part of your academic plan.

~~Please note that you substitute SCI 308 for ECI 308. Also note that these 31 units include ECI 495C, which meets NAU's senior capstone requirement.~~

SCIENCE AND MATHEMATICS TEACHER-PREPARATION REQUIREMENTS

You must complete the following 33 units of professional courses to qualify for certification to teach mathematics in Arizona and most other states:

- TSM 101 and 102 (2 units)
- TSM 300, 350, 404, 450 (12 units)
- TSM 495C, TSM 496C (13 units)
- BME 300 and 437 (6 units)

TSM 495C and TSM 496C meet NAU's senior capstone requirement. You must have an academic advisor in both your major department and in the NAUTeach program for the teacher-preparation portion of the plan.

Click here for more information about Science and Mathematics Teacher Preparation in Secondary Education.

Click here for more information about the NAUTeach Program:
<http://www4.nau.edu/csti/NAUTeach/>

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.

You may take these remaining courses

You may take these remaining courses from any academic areas, using these courses to pursue your specific interests and goals. We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here to view our Chemistry and Biochemistry [undergraduate courses](#) and [faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.

In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):

- EDF 200 (3 units)
- BME 437 (3 units)
- ECI 308, 322, 450, and 465 (10 units)
- EPS 325 (3 units)
- in your senior year, ECI 495C,

from any academic areas, using these courses to pursue your specific interests and goals. We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here to view our Chemistry and Biochemistry [undergraduate courses](#) and [faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.

In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):

- EDF 200 (3 units)
- BME 437 (3 units)
- ECI 308, 322, 450, and 465 (10 units)
- EPS 325 (3 units)
- in your senior year, ECI 495C, which meets NAU's senior capstone

which meets NAU's senior capstone requirement (12 units)

You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special exam.

You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.

Click here for more information about our ECI [undergraduate courses](#), [graduate courses](#), and [faculty](#).

ADD NEW ->

requirement (12 units)

~~You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special exam.~~

~~- You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher preparation plan after you apply to the plan.~~

~~- Click here for more information about our ECI [undergraduate courses](#), [graduate courses](#), and [faculty](#).~~

SCIENCE AND MATHEMATICS TEACHER PREPARATION SECONDARY EDUCATION

The NAU Teach program prepares secondary science and mathematics teachers for certification to teach in grades 7 through 12. Students pursuing this degree will earn a major in their content area and will be eligible for secondary certification in Arizona. The following degrees are included in this program:

- B.S.Ed. in Biology Secondary Education (Extended major)
- B.S.Ed. in Chemistry Secondary Education (Extended major)
- B.S.Ed. in Earth Science Secondary Education (Extended major)
- B.S.Ed. in General Science Secondary Education (Extended major)
- B.S.Ed. in Mathematics Secondary Education
- B.S.Ed. in Physics Secondary Education (Extended major)

You must have an academic advisor in

your major department. In addition, you must meet with an advisor in the NAU Teach program for the teacher-preparation portion of your plan.

Click here for more information about the NAU Teach Program:

<http://www4.nau.edu/cstl/NAUteach/>

NAU Teach Program Admission:

In order to take NAU Teach courses beyond TSM 300, you must be admitted to the NAU Teach Program. Program acceptance is required before enrolling in TSM 350. Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or equivalent). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125 or 125H, 136 or 136H, or equivalent)
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAU Teach program application form.

Admission to Apprentice Teaching: In order to apply for apprentice teaching, you must meet the following requirements:

- Complete and submit the NAUTeach Apprentice Teaching Application.
- Provide evidence that all degree courses will be completed by the time you enroll in TSM 495C and 496C.
- Have a cumulative 2.5 grade point average in all NAU coursework.
- ~~Complete all TSM courses with a grade of C or better.~~
- ~~Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students must also pass signature assessments in MAT 401 and 402.~~
- Receive an acceptable evaluation of your initial portfolio.
- Take the appropriate AEPA Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Recommended during 6th term. Earth Science majors need to earn a grade of C or better in GLG 445C instead of attempting the AEPA. (Note: Many science majors may earn a second endorsement by passing the General Science AEPA exam.)

Apprentice Teaching: The Apprentice Teaching field experience (TSM 495C) and Seminar (TSM 496C) meets NAU's senior capstone requirement (13 units). To participate in these courses you must:

- Be admitted to Apprentice Teaching.
- Complete all TSM courses (except TSM 495C and 496C) with a grade of C or better.
- Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students

must also pass signature assessments in MAT 401 and 402.

Completion of Program: In order to graduate from the NAU Teach program, you must pass TSM 495C, receive a grade of C or better in TSM 496C (based on the successful completion of all signature assessments), and have a grade point average of at least 2.5 in all NAU coursework.

Certifying to Teach in Arizona: In order to gain certification in Arizona to teach mathematics or science, you must meet the following:

- Evidence that you have satisfied the Arizona and Federal Constitution proficiency requirement through special test OR completion of POS 220 OR completion of POS 110 and 241.
- You must pass both the AEPA Secondary Professional Knowledge test and the Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Earth Science majors meet this requirement through earning a grade of C or better in GLG 445C).

| Freshman Year | | | | | |
|----------------------|--|----|----------------------|-------------------------------------|----|
| 1 st term | | | 2 nd term | | |
| CHM 151 | General Chemistry I | 4 | CHM 152 | General Chemistry I | 3 |
| CHM 151L | General Chemistry Lab | 1 | CHM 152L | General Chemistry II Lab | 1 |
| ENG 105 | Critical Reading and Writing (FNRQ) | 4 | MAT 136 | Calculus I (SCI: SCI: SAS) | 4 |
| TSM 101 | Step 1: Inquiry Approaches to Teaching | 1 | BIO 181 | Unity of Life (SCI: SCI: SAS) | 3 |
| NAU 100 | Transition to College | 1 | BIO 181L | Unity of Life Lab | 1 |
| GE | General Electives * | 3 | TSM 102 | Step 2: Inquiry-Based Lesson Design | 1 |
| | | | LS | Liberal Studies** | 3 |
| Total units | | 14 | Total units | | 16 |

| Sophomore Year | | | | | |
|----------------------------|--------------------------------------|----|----------------------|---------------------------------------|----|
| 3 rd term | | | 4 th term | | |
| CHM 235 | Organic Chemistry I | 4 | CHM 238 | Organic Chemistry II | 3 |
| CHM 235L | Organic Chemistry I Lab | 1 | CHM 238L | Organic Chemistry II Lab | 2 |
| MAT 137 | Calculus II (FNRQ) | 4 | PHY 262 | University Physics II (SCI: SCI: SAS) | 3 |
| PHY 161 | University Physics I (SCI: SCI: SAS) | 3 | TSM 350 | Classroom Interactions | 3 |
| PHY 161L | University Physics Lab | 1 | BME 300 | Intro to Structured English Immersion | 3 |
| TSM 300 | Knowing & Learning | 3 | LS/DIV | Liberal Studies / Diversity *** | 3 |
| Apply to NAU Teach Program | | | | | |
| Total units | | 16 | Total units | | 17 |

| Junior Year | | | | | |
|----------------------|----------------------------------|----|---|---------------------------------|----|
| 5 th term | | | 6 th term | | |
| CHM 341 | Physical Chemistry I | 3 | CHM 320 | Analytical Chemistry | 3 |
| ME | Major Elective + | 3 | CHM 320L | Analytical Chem. Lab | 1 |
| JLWC | Junior Level Writing Course **** | 3 | ME | Major Elective + | 3 |
| PHI 359 | Philosophy of Science (AHI) | 3 | TSM 404 | Research Methods | 3 |
| LS | Liberal Studies | 3 | LS/DIV | Liberal Studies / Diversity *** | 3 |
| | | | GE | General Electives | 3 |
| | | | Attempt AEPA Chemistry Subject Knowledge Test | | |
| Total units | | 15 | Total units | | 16 |

| Senior Year | | | | | |
|------------------------------|--------------------------------------|----|----------------------|---------------------|----|
| 7 th term | | | 8 th term | | |
| GLG 101 | Physical Geology (SCI: SCI: LAB) | 3 | TSM 495C | Apprentice Teaching | 12 |
| GLG 103 | Physical Geology Lab (SCI: SCI: LAB) | 1 | TSM 496C | Seminar | 1 |
| BME 437 | SEI Methods in Secondary School | 3 | | | |
| TSM 450 | Project-Based instruction | 3 | | | |
| LS | Liberal Studies | 3 | | | |
| Apply to Apprentice Teaching | | | | | |
| Total units | | 13 | Total units | | 13 |

Total Credits: 120

Liberal Studies Distribution blocks

| | | | | |
|---------------|---------------|--------------|-----------------------|--------------------------------------|
| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 35 total |
| PHI 359 | ** | | GLG 101 & GLG 103 (4) | |
| | | | BIO 181 (3) | PHY 161 (3) |

PROGRAM INFORMATION

A minimum of 120 units are required for this degree.

Recitations are available and strongly encouraged for CHM 151, CHM 152, CHM 235, CHM 238, PHY 161, and PHY 262, however they are not required.

*If you are not prepared to take MAT 136 in term 2, MAT 125- Pre-Calculus needs to be completed in term 1.

**PSY 101 (SPW) recommended

***Take a Liberal Studies course that also satisfied a Diversity requirement.

**** Junior Level Writing Requirement is fulfilled by the completion of CHM 300W, ENG 302W, or ENG 305W

+ Major electives include two of the following three courses: CHM 350, 360 or 440

NAU Teach Program Admission:

In order to take NAU Teach courses beyond TSM 300, you must be admitted to the NAU Teach Program. Program acceptance is required before enrolling in TSM 350. Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card OR verification of application for fingerprint card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or ENG 101 & 102). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125, 136, or equivalent).
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAU Teach program application form.

You must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate.
See catalog for additional information regarding application for Apprentice Teaching.

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/LScourcelist.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>
 - 30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU
- English placement: <http://www.nau.edu/comp/placement.html>
- Math placement: <http://www.cefns.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml>

CONTACT INFORMATION

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Building 20, Room 125
Phone: 928-523-3008
Department Chair: Brandon Cruickshank
Phone: 928-523-9602
EMAIL: Brandon.Cruickshank@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

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.
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.

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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

Learning outcomes for the B.S.Ed. program are specified by NCATE. They include the application of the following learning outcomes to the science classroom: Content Knowledge, Nature of Science, Inquiry, Science-Technology-Society Issues, General Skills of Teaching, Curriculum, Science in the Community, Assessment, Safety and Welfare, Professional Growth, Technology, and Diversity.

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

There is a critical shortage of secondary science and mathematics teachers throughout the nation and especially in Arizona. According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to current science and mathematics teacher shortages that already exist.

NAU has been selected to receive grant monies for the purpose of replicating a highly successful secondary teacher preparation program for mathematics and science teachers that has been developed by the University of Texas at Austin. Students who complete the NAUTeach Program requirements will complete a series of courses that will replace the current education courses required in the B.S.Ed. degrees.

CHM 360 is a one-semester biochemistry course, whereas CHM 461 is the first-semester course in a two-semester biochemistry sequence. CHM 360 is the biochemistry course that should be taken by students who are taking only one semester of biochemistry.

Adding CHM 440 (Environmental Chemistry) gives students more flexibility in choosing upper-division courses in their area of interest. Students will now take 2 of 3 courses: CHM 350 (Inorganic Chemistry), CHM 360 (Fundamental Biochemistry), and CHM 440 (Environmental Chemistry).

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

Presently, NAU graduates about a dozen mathematics and science secondary teachers each year. The goal of the NAUTeach Program is to increase this number to 60 or more. Two master teachers have already been hired and temporary space has been provided in the Chemistry Building. As the number of students in the NAUTeach Program increases, additional master teachers, content teachers, and support staff will be hired and some additional space will be needed. This increase in staffing and space has been approved by the President's office and will be initially funded by grant funds, then to be replaced by permanent state funds (as agreed to by the President in an MOU with the granting agency).

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.

This plan will only affect B.S.Ed. degrees in secondary science and mathematics. The addition of PHI 359, Philosophy of Science, will be required. A letter of support from the Department of Philosophy is attached.

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

Yes, the materials, texts, and supplemental readings for all new courses in the NAUTeach Program are all available online, through the Center for Science Teaching and Learning, the Department of Mathematics and Statistics, and the Cline Library.

courses in their area of interest. Students will now take 2 of 3 courses: CHM 350 (Inorganic Chemistry), CHM 360 (Fundamental Biochemistry), and CHM 440 (Environmental Chemistry).

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

Presently, NAU graduates about a dozen mathematics and science secondary teachers each year. The goal of the NAU Teach Program is to increase this number to 60 or more. Two master teachers have already been hired and temporary space has been provided in the Chemistry Building. As the number of students in the NAU Teach Program increases, additional master teachers, content teachers, and support staff will be hired and some additional space will be needed. This increase in staffing and space has been approved by the President's office and will be initially funded by grant funds, then to be replaced by permanent state funds (as agreed to by the President in an MOU with the granting agency).


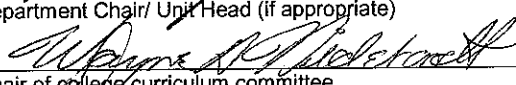
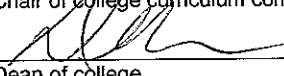
13. Will this academic plan/subplan affect other majors, liberal studies course offerings, plans/subplans, curricula, or enrollment at NAU? If so, attach supporting documentation from the affected departments/units and college dean.

This plan will only affect B.S.Ed. degrees in secondary science and mathematics. The addition of PHI 359, Philosophy of Science, will be required. A letter of support from the Department of Philosophy is attached.


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

Yes, the materials, texts, and supplemental readings for all new courses in the NAU Teach Program are all available online, through the Center for Science Teaching and Learning, the Department of Mathematics and Statistics, and the Cline Library.

Certifications

| | |
|---|------------------|
|  Department Chair/ Unit Head (if appropriate) | 10/21/08 Date |
|  Chair of college curriculum committee | 10/29/08 Date |
|  Dean of college | 10/20/08 Date |

For committee use only

| | |
|--|-----------------|
|  For University Curriculum Committee | 12/7/08 Date |
|--|-----------------|

Action taken: approved as submitted approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

| | | |
|---|---|---|
| 1. College <u>CEFNS</u> | 2. Academic Unit/Department <u>Geology</u> | |
| 3. Academic Plan Name <u>B.S.Ed. Earth Science Secondary Education (Extended Major)</u> | 4. Subplan (if applicable)? _____ | |
| 5. Effective Date <u>FALL 2009</u> | | |
| 6. Is this proposal for a : | | |
| <input type="checkbox"/> New Plan | <input checked="" type="checkbox"/> Plan Change | <input type="checkbox"/> Plan Deletion |
| <input type="checkbox"/> New Subplan | <input type="checkbox"/> Subplan Change | <input type="checkbox"/> Subplan Deletion |

7.

For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the *current* on line 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.

B.S. ED. EARTH SCIENCE SECONDARY EDUCATION (EXTENDED MAJOR)

To earn this degree, complete at least 128 units of coursework, which we describe in the sections that follow:

- at least 35 units of liberal studies requirements. Be aware that you may not use courses with a GLG prefix to satisfy any of these liberal studies requirements.
- at least 62 units of major requirements
- at least 31 units of teacher-preparation requirements
- elective courses, if needed, to reach an overall total of at least 128 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a [list of the available diversity courses](#).

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.)

B.S. ED. EARTH SCIENCE SECONDARY EDUCATION (EXTENDED MAJOR)

To earn this degree, complete at least ~~128~~ **120** units of coursework, which we describe in the sections that follow:

- at least 35 units of liberal studies requirements. Be aware that you may not use courses with a GLG prefix to satisfy any of these liberal studies requirements.
- at least ~~62~~ **64** units of major requirements
- at least ~~31~~ **33** units of teacher-preparation requirements
- elective courses, if needed, to reach an overall total of at least ~~128~~ **120** units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a [list of the available diversity courses](#).

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

Additionally, you should be aware that you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.

Finally, please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least 128 units to graduate. Contact your advisor for details.

Also be aware that, for the B.S.Ed. degree, you must have the following:

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent) (If you don't receive a 3.0, you may complete an additional writing course, at the 200 level or above, with at least a B, to meet this requirement.)
- a grade of at least C for the mathematics foundation requirement (generally MAT 110, 114, 125, or 155)

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

~~Additionally, you should be aware that you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.~~

~~Finally,~~ Please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least ~~128~~ **120** units to graduate. Contact your advisor for details.

Also be aware that, for the B.S.Ed. degree, you must have the following:

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent) (If you don't receive a 3.0, you may complete an additional **ENG** writing course, at the 200 level or above, with at least a B, to meet this requirement.)
- a grade of at least C for the mathematics foundation requirement (~~generally MAT 110, 114, 125, or 155~~) **(MAT 125 or 125H, 136 or 136H, or equivalent)**
- **A grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.**

MAJOR REQUIREMENTS

You must complete 63 units of major requirements, as we explain in the following paragraphs.

You take 33 units of general requirements:

- GLG 101, 102, 103, 104, 107, 225, 240, 304, and 430 (25 units)
- GGR 461 (4 units)
- AST 180 and 181 or GLG 190 and 190L (4 units)

You also take 30 units of mathematics and science teaching support courses:

- BIO 181:181L and 182 (8 units)
- CHM 130 or 151 plus CHM 151L (5 units)
- PHY 111 and 111L (4 units)
- SCI 461 (3 units)
- MAT 125 (4 units)
- PHS 300W or GLG 350W, both of which meet NAU's junior writing requirement (3 units)
- SCI 460C, which meets NAU's senior capstone requirement (3 units)

MAJOR REQUIREMENTS

You must complete **the following 63 64** units

Geology Courses

Complete the following 37 units with a grade of C or better in each course.

You take ~~33~~ **37** units of general requirements:

- GLG 101 or 101H, 102, 103, 104, 107, **115, 190 and 190L**, 225, 240, 304, **360, 445C**, and 430 (37 units)
- ~~GGR 461 (4 units)~~
- ~~AST 180 and 181 or GLG 190 and 190L (4 units)~~

Supporting Courses

~~You also take~~ **Complete the following 30 27** units of mathematics and science teaching support courses:

- BIO 181:181L **or 181H:181L** and 182 **or 182H** (8 units)
- CHM 130 or 151 plus CHM 151L (5 units)
- PHY 111 and 111L (4 units)
- ~~SCI 461 (3 units)~~
- MAT 125 **or 125H** (4 units)
- ~~PHS 300W or GLG 350W, both of which meet~~ NAU's junior writing requirement (3 units)
- **PHI 359 or 359H (3 units)**
- ~~SCI 460C, which meets NAU's senior capstone requirement (3 units)~~

TEACHER-PREPARATION REQUIREMENTS

You must complete 31 units of professional courses offered by the College of Education to qualify for certification to teach earth science in Arizona and most other states.

For information about these requirements, see Teacher Preparation in Secondary Education (within Teaching and Learning) in the Education section. Please note that, for this major, you substitute SCI 308 for ECI 308. You should also receive advisement from the College of Education for this part of your academic plan.

ADD NEW ->

GENERAL ELECTIVES

~~TEACHER-PREPARATION REQUIREMENTS~~

~~You must complete 31 units of professional courses offered by the College of Education to qualify for certification to teach earth science in Arizona and most other states.~~

~~For information about these requirements, see Teacher Preparation in Secondary Education (within Teaching and Learning) in the Education section. Please note that, for this major, you substitute SCI 308 for ECI 308. You should also receive advisement from the College of Education for this part of your academic plan.~~

SCIENCE AND MATHEMATICS TEACHER-PREPARATION REQUIREMENTS

You must complete the following 33 units of professional courses to qualify for certification to teach mathematics in Arizona and most other states:

- TSM 101 and 102 (2 units)
- TSM 300, 350, 404, 450 (12 units)
- TSM 495C, TSM 496C (13 units)
- BME 300 and 437 (6 units)

TSM 495C and TSM 496C meet NAU's senior capstone requirement. You must have an academic advisor in both your major department and in the NAU Teach program for the teacher-preparation portion of the plan.

Click here for more information about Science and Mathematics Teacher Preparation in Secondary Education.

Click here for more information about the NAU Teach Program:
<http://www4.nau.edu/cstl/NAUteach/>

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 128 units of credit.

You may take these remaining courses from any academic areas, using these courses to pursue your specific interests and goals. We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for more information about [Geology undergraduate courses](#) and [faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.

In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):

- EDF 200 (3 units)
- BME 437 (3 units)
- ECI 308, 322, 450, and 465 (10 units)
- EPS 325 (3 units)
- in your senior year, ECI 495C, which

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of ~~128~~ **120** units of credit.

You may take these remaining courses from any academic areas, using these courses to pursue your specific interests and goals. We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for more information about [Geology undergraduate courses](#) and [faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

~~To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.~~

~~In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):~~

- ~~• EDF 200 (3 units)~~
- ~~• BME 437 (3 units)~~
- ~~• ECI 308, 322, 450, and 465 (10 units)~~
- ~~• EPS 325 (3 units)~~
- ~~• in your senior year, ECI 495C, which~~

meets NAU's senior capstone requirement (12 units)

You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special exam.

You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.

Click here for more information about our [ECI undergraduate courses](#), [graduate courses](#), and [faculty](#).

ADD NEW ->

~~meets NAU's senior capstone requirement (12 units)~~

~~You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special exam.~~

~~You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.~~

~~Click here for more information about our [ECI undergraduate courses](#), [graduate courses](#), and [faculty](#).~~

SCIENCE AND MATHEMATICS TEACHER PREPARATION SECONDARY EDUCATION

The NAU Teach program prepares secondary science and mathematics teachers for certification to teach in grades 7 through 12. Students pursuing this degree will earn a major in their content area and will be eligible for secondary certification in Arizona. The following degrees are included in this program:

- B.S.Ed. in Biology Secondary Education (Extended major)
- B.S.Ed. in Chemistry Secondary Education (Extended major)
- B.S.Ed. in Earth Science Secondary Education (Extended major)
- B.S.Ed. in General Science Secondary Education (Extended major)
- B.S.Ed. in Mathematics Secondary Education
- B.S.Ed. in Physics Secondary Education (Extended major)

You must have an academic advisor in your major department. In addition, you must meet with an advisor in the NAU Teach program for the teacher-preparation portion of your plan.

Click here for more information about the NAU Teach Program:

<http://www4.nau.edu/cstl/NAU Teach/>

NAU Teach Program Admission:

In order to take NAU Teach courses beyond TSM 300, you must be admitted to the NAU Teach Program. Program acceptance is required before enrolling in TSM 350.

Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or equivalent). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125 or 125H, 136 or 136H, or equivalent)
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAU Teach program application form.

Admission to Apprentice Teaching: In

order to apply for apprentice teaching, you must meet the following requirements:

- Complete and submit the NAU Teach Apprentice Teaching Application.
- Provide evidence that all degree courses will be completed by the time you enroll in TSM 495C and 496C.
- Have a cumulative 2.5 grade point average in all NAU coursework.
- ~~Complete all TSM courses with a grade of C or better.~~
- ~~Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students must also pass signature assessments in MAT 401 and 402.~~
- Receive an acceptable evaluation of your initial portfolio.
- Take the appropriate AEPA Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Recommended during 6th term. Earth Science majors need to earn a grade of C or better in GLG 445C instead of attempting the AEPA. (Note: Many science majors may earn a second endorsement by passing the General Science AEPA exam.)

Apprentice Teaching: The Apprentice Teaching field experience (TSM 495C) and Seminar (TSM 496C) meets NAU's senior capstone requirement (13 units). To participate in these courses you must:

- Be admitted to Apprentice Teaching.
- Complete all TSM courses (except TSM 495C and 496C) with a grade of C or better.
- Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students must also pass signature assessments in MAT 401 and 402.

Completion of Program: In order to graduate from the NAU Teach program, you

must pass TSM 495C, receive a grade of C or better in TSM 496C (based on the successful completion of all signature assessments), and have a grade point average of at least 2.5 in all NAU coursework.

Certifying to Teach in Arizona: In order to gain certification in Arizona to teach mathematics or science, you must meet the following:

- Evidence that you have satisfied the Arizona and Federal Constitution proficiency requirement through special test OR completion of POS 220 OR completion of POS 110 and 241.
- You must pass both the AEPA Secondary Professional Knowledge test and the Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Earth Science majors meet this requirement through earning a grade of C or better in GLG 445C).

| Freshman Year | | | | | |
|----------------------|--|-------------|----------------------|-------------------------------------|-------------|
| 1 st term | | | 2 nd term | | |
| GLG 101 | Physical Geology | 3 | GLG 102 | Historical Geology | 3 |
| GLG 103 | Physical Geology Lab | 1 | GLG 104 | Historical Geology Lab | 1 |
| MAT 125 | Pre-Calculus (FNRO) | 4 | BIO 181 | Unity of Life I (SCI: SAS) | 3 |
| CHM 130 or 151 | Chemistry (SCI: LAB) | 4 | BIO 181L | Unity of Life Lab | 1 |
| CHM 151L | General Chemistry Lab (SCI: LAB) | 1 | ENG 105 | Critical Reading and Writing (FNRO) | 4 |
| TSM 101 | Step 1: Inquiry Approaches to Teaching | 1 | TSM 102 | Step 2: Inquiry-Based Lesson Design | 1 |
| NAU 100 | Transition to College | 1 | | | |
| | | Total units | | | Total units |
| | | 15 | | | 13 |

| Sophomore Year | | | | | |
|----------------------------|---------------------|-------------|----------------------|------------------------------|-------------|
| 3 rd term | | | 4 th term | | |
| GLG 240 | Intro Field Methods | 2 | GLG 304 | Geology of Arizona | 4 |
| GLG 225 | Paleontology | 4 | GLG 107 | Oceanography | 3 |
| GLG 190 | The Planets | 3 | PHY 111 | General Physics I (SCI: SAS) | 3 |
| GLG 190L | The Planets Lab | 1 | PHY 111L | General Physics I Lab | 1 |
| BIO 182 | Unity of Life II | 4 | TSM 350 | Classroom Interactions | 3 |
| TSM 300 | Knowing & Learning | 3 | | | |
| Apply to NAU Teach Program | | | | | |
| | | Total units | | | Total units |
| | | 17 | | | 14 |

| Junior Year | | | | | |
|-------------|--|--|--|--|--|
|-------------|--|--|--|--|--|

| 5 th term | | | | 6 th term | | | |
|----------------------|------------------------------|---|--|----------------------|---------------------------------------|---|--|
| GLG 360 | Applied Geology | 4 | | GLG 350W | Geologic Communication & Topics | 3 | |
| PHI 359 | Philosophy of Science (AHI) | 3 | | GLG 115 | Climate Change | 3 | |
| LS/DIV | Liberal Studies/Diversity ** | 3 | | BME 300 | Intro to Structured English Immersion | 3 | |
| LS | Liberal Studies * | 3 | | TSM 404 | Research Methods | 3 | |
| GE | General Elective | 3 | | LS/DIV | Liberal Studies/Diversity ** | 3 | |
| Total units | | | | Total units | | | |
| 16 | | | | 15 | | | |

| Senior Year | | | | | | | |
|-------------------------------|----------------------------------|---|--|----------------------|---------------------|----|--|
| 7 th term | | | | 8 th term | | | |
| GLG 430 | Geomorphology | 4 | | TSM 495C | Apprentice Teaching | 12 | |
| GLG 445C | Earth Science Capstone | 1 | | TSM 496C | Seminar | 1 | |
| TSM 450 | Project-Based Instruction | 3 | | | | | |
| BME 437 | SEI Methods in Secondary Schools | 3 | | | | | |
| LS | Liberal Studies | 3 | | | | | |
| LS | Liberal Studies | 3 | | | | | |
| Apply for Apprentice Teaching | | | | | | | |
| Total units | | | | Total units | | | |
| 17 | | | | 13 | | | |
| Total Units: 120 | | | | | | | |

Liberal Studies Distribution blocks

| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 35 total |
|---------------|---------------|--------------|---------------------------|--------------------------------------|
| PHI 359 | * | | CHM 130 or 151 & 151L (5) | |
| | | | BIO 181 (3) | PHY 111 (3) |

PROGRAM INFORMATION

A minimum of 120 units are required for this degree. A grade of C or better is required for the 37 units of GLG courses.

Recitations are available and strongly encouraged for CHM 130, 151, PHY 111, BIO 181 and BIO 182; however they are not required.

* PSY 101 (SPW) recommended

** Take a Liberal Studies course that also satisfies a diversity requirement.

NAUTeach Program Admission:

In order to take NAUTeach courses beyond TSM 300, you must be admitted to the NAUTeach Program. Program acceptance is required before enrolling in TSM 350. Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card OR verification of application for fingerprint card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or ENG 101 & 102). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125, 136, or equivalent).
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAUTeach program application form.

You must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. See catalog for additional information regarding application for Apprentice Teaching.

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/LScourcelist.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>
 - 30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU
- English placement: <http://www.nau.edu/comp/placement.html>
- Math placement: <http://www.cefn.s.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml>

CONTACT INFORMATION

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 Department Chair: Mary Reid
 Phone: 908-523-7200
 EMAIL: Mary.Reid@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

8. 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.

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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).
Learning outcomes for the B.S.Ed. program are specified by NCATE. They include the application of the following learning outcomes to the science classroom: Content Knowledge, Nature of Science, Inquiry, Science-Technology-Society Issues, General Skills of Teaching, Curriculum, Science in the Community, Assessment, Safety and Welfare, Professional Growth, Technology, and Diversity.

11. Justification for proposal. Please indicate how past assessments of student learning prompted proposed changes.
There is a critical shortage of secondary science and mathematics teachers throughout the nation and especially in Arizona. According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to current science and mathematics teacher shortages that already exist.

NAU has been selected to receive grant monies for the purpose of replicating a highly successful secondary teacher preparation program for mathematics and science teachers that has been developed by the University of Texas at Austin. Students who complete the NAUTeach Program

requirements will complete a series of courses that will replace the current education courses required in the B.S.Ed. degrees.

Removal of GGR 461 as a requirement and replacement with GLG 115: GLG 115, Climate Change, is a new course being offered by the Department of Geology. Although GGR 461 has served our students well in the past, our new course will make students aware of climate issues as they relate to Earth and its geology and environment.

Removal of AST 180 and AST 181 as a required option: GLG 190, The Planets, addresses the geology of the planets. This emphasis is related more closely with the major area of study than an astronomical approach to studying the solar system.

Removal of PHS 300W as a required option: Students will take GLG 350W which addresses written and oral communication as it relates directly to geology. The course is often structured to relate to projects students are doing in other concurrent or past geology courses as a means of enhancing and improving their skills.

Inclusion of GLG 360 as a required course: As seen in the course description for GLG 360, students will be exposed to how their geologic background will allow them "to understand the interactions of humans with Earth systems." This course could serve as a non-formal capstone experience thereby showing the relevancy of previous coursework.

Inclusion of GLG 445C as a capstone course: In order to teach secondary science, most majors need to pass the Arizona Educators Proficiency Assessment in their content area. No such test exists for Earth Science. In order to ensure that our students have the content knowledge that they need to successfully teach in Arizona schools, we are adding this one unit capstone course. The course will 1) review the major principles of geology as presented in the BSEd degree, 2) test for knowledge of these principles, and, 3) if needed, remediate students' content knowledge understanding.

12. If this academic plan/subplan will require additional faculty, space, or equipment, how will these requirements be satisfied?
Presently, NAU graduates about a dozen mathematics and science secondary teachers each year. The goal of the NAU Teach Program is to increase this number to 60 or more. Two master teachers have already been hired and temporary space has been provided in the Chemistry Building. As the number of students in the NAU Teach Program increases, additional master teachers, content teachers, and support staff will be hired and some additional space will be needed. This increase in staffing and space has been approved by the President's office and will be initially funded by grant funds, then to be replaced by permanent state funds (as agreed to by the President in an MOU with the granting agency).
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.
This plan will only affect B.S. Ed. in secondary science and mathematics degrees. The NAU Teach Program should increase the numbers of B.S. Ed. math and science students that are graduated each year. The addition of PHI 359, Philosophy of Science, will be required. A letter of support from the Department of Philosophy is attached.
14. Will present library holdings support this academic plan/subplan?
Yes, the materials, texts, and supplemental readings for all new courses in the NAU Teach Program are all available online, through the Center for Science Teaching and Learning, the Department of Mathematics and Statistics, and the Cline Library.

Certifications

Department Chair/ Unit Head (if appropriate)

Date

projects students are doing in other concurrent or past geology courses as a means of enhancing and improving their skills.

Inclusion of GLG 360 as a required course: As seen in the course description for GLG 360, students will be exposed to how their geologic background will allow them "to understand the interactions of humans with Earth systems." This course could serve as a non-formal capstone experience thereby showing the relevancy of previous coursework.

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Presently, NAU graduates about a dozen mathematics and science secondary teachers each year. The goal of the NAU Teach Program is to increase this number to 60 or more. Two master teachers have already been hired and temporary space has been provided in the Chemistry Building. As the number of students in the NAU Teach Program increases, additional master teachers, content teachers, and support staff will be hired and some additional space will be needed. This increase in staffing and space has been approved by the President's office and will be initially funded by grant funds, then to be replaced by permanent state funds (as agreed to by the President in an MOU with the granting agency).

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.

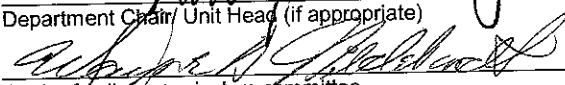
This plan will only affect B.S. Ed. in secondary science and mathematics degrees. The NAU Teach Program should increase the numbers of B.S. Ed. math and science students that are graduated each year. The addition of PHI 359, Philosophy of Science, will be required. A letter of support from the Department of Philosophy is attached.

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Yes, the materials, texts, and supplemental readings for all new courses in the NAU Teach Program are all available online, through the Center for Science Teaching and Learning, the Department of Mathematics and Statistics, and the Cline Library.


Certifications



Department Chair/ Unit Head (if appropriate) 10/21/08
Date



Chair of college curriculum committee 10/20/08
Date



Dean of college 10/20/08
Date

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. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

1. College CEFNS

2. Academic Unit/Department Mathematics and Statistics

3. Academic Plan Name B.S.Ed. in Mathematics Secondary Education

4. Subplan (if applicable)? _____

5. Effective Date FALL 2009

6. Is this proposal for a : New Plan Plan Change Plan Deletion
 New Subplan Subplan Change Subplan Deletion

7.

For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the *current* on line 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.

B.S. ED. MATHEMATICS SECONDARY EDUCATION

To earn this degree, you must complete at least 120 units of coursework, which we describe in the sections that follow:

- at least 32 units of liberal studies requirements Be aware that you may not use courses with an MAT or STA prefix to satisfy these liberal studies requirements. Please note that the usual 35 units for liberal studies are reduced to 32 units for mathematics majors, who are exempted from the 3-unit mathematics foundation requirement.
- at least 47 units of major requirements
- at least 31 units of teacher-preparation requirements
- elective courses, if needed, to reach an overall total of at least 120 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

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.)

B.S. ED. MATHEMATICS SECONDARY EDUCATION

To earn this degree, you must complete at least 120 units of coursework, which we describe in the sections that follow:

- at least 32 units of liberal studies requirements Be aware that you may not use courses with an MAT or STA prefix to satisfy these liberal studies requirements. Please note that the usual 35 units for liberal studies are reduced to 32 units for mathematics majors, who are exempted from the 3-unit mathematics foundation requirement.
- at least 47 units of major requirements
- at least ~~31~~ **33** units of teacher-preparation requirements
- elective courses, if needed, to reach an overall total of at least 120 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must have a grade of C or better in each mathematics or statistics course that you use to fulfill the requirements of this major.

Also be aware that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a [list of the available diversity courses](#).

Additionally, be aware that you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.

Also note that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

Please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least 120 units to graduate. Contact your advisor for details.

Candidates in the Secondary Mathematics Education program are required to demonstrate content knowledge, pedagogical knowledge and skills, and professional knowledge to be eligible to enter student teaching or internship placements. Content, pedagogical, and professional knowledge or skills are demonstrated through candidate performance on key assessments embedded in the MAT 301, MAT 302, MAT 401, MAT 402, BME 437, ECI 322, ECI 450, ECI 465 and ECI 495C classes.

Finally be aware that, for the B.S.Ed. degree, you must have the following:

~~Please note that you must have a grade of C or better in each mathematics or statistics course that you use to fulfill the requirements of this major.~~

Also be aware that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a [list of the available diversity courses](#).

~~Additionally, be aware that you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.~~

Also note that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

Please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least 120 units to graduate. Contact your advisor for details.

~~Candidates in the Secondary Mathematics Education program are required to demonstrate content knowledge, pedagogical knowledge and skills, and professional knowledge to be eligible to enter student teaching or internship placements. Content, pedagogical, and professional knowledge or skills are demonstrated through candidate performance on key assessments embedded in the MAT 301, MAT 302, MAT 401, MAT 402, BME 437, ECI 322, ECI 450, ECI 465 and ECI 495C classes.~~

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent) (If you don't receive a 3.0, you may complete an additional writing course, at the 200 level or above, with at least a B, to meet this requirement.)

MAJOR REQUIREMENTS

You must complete the following 47 units:

- MAT 136, 137, 226, 301, 318, 365, 401, 402, and 442C and STA 275 (32 units)
- CS 122 (3 units) (If you complete a minor or major in computer science, you may add 3 units to your general electives instead.)
- MAT 320W, which meets NAU's junior writing requirement (3 units)
- MAT 411C or MAT 431C (3 units)
- 6 additional units of MAT and STA courses numbered 238 or above

TEACHER-PREPARATION REQUIREMENTS

You must complete 31 units of professional courses offered by the College of Education to qualify for certification to teach mathematics in Arizona and most other states.

Click here for more information about [Teacher](#)

Finally **Also** be aware that, for the B.S.Ed. degree, you must have the following:

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent) (If you don't receive a 3.0, you may complete an additional writing course, at the 200 level or above, with at least a B, to meet this requirement.)
- **A grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.**

MAJOR REQUIREMENTS

You must complete the following 47 units **with a grade of C or better in each course:**

- MAT 136 **or 136H**, 137, **185**, 226, 301, 318, 365, 401, 402, and 442C and STA 275 (32 units)
- CS 122 (3 units) (If you complete a minor or major in computer science, you may add 3 units to your general electives instead.)
- MAT 320W, which meets NAU's junior writing requirement (3 units)
- MAT 411C or MAT 431C (3 units)
- 6 additional units of MAT and STA courses numbered 238 or above

~~TEACHER-PREPARATION REQUIREMENTS~~

~~You must complete 31 units of professional courses offered by the College of Education to qualify for certification to teach mathematics in Arizona and most other states.~~

Preparation in Secondary Education . You should also receive advisement from the College of Education for this part of your academic plan.

Please note that these 31 units include ECI 495C, which meets NAU's senior capstone requirement. Also note that for the B.S.Ed. in mathematics, you substitute MAT 302 for ECI 308.

ADD NEW->

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.

You may take these remaining courses from any academic areas, using these courses to

~~-
Click here for more information about Teacher Preparation in Secondary Education . You should also receive advisement from the College of Education for this part of your academic plan.~~

~~-
Please note that these 31 units include ECI 495C, which meets NAU's senior capstone requirement. Also note that for the B.S.Ed. in mathematics, you substitute MAT 302 for ECI 308.~~

SCIENCE AND MATHEMATICS TEACHER- PREPARATION REQUIREMENTS

You must complete the following 33 units of professional courses to qualify for certification to teach mathematics in Arizona and most other states:

- TSM 101 and 102 (2 units)
- TSM 300, 350, 404, 450 (12 units)
- TSM 495C, TSM 496C (13 units)
- BME 300 and 437 (6 units)

TSM 495C and TSM 496C meet NAU's senior capstone requirement. You must have an academic advisor in both your major department and in the NAU Teach program for the teacher-preparation portion of the plan.

Click here for more information about Science and Mathematics Teacher Preparation in Secondary Education.

**Click here for more information about the NAU Teach Program:
<http://www4.nau.edu/cstl/NAU Teach/>**

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.

pursue your specific interests and goals. We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for more information about our Mathematics undergraduate [courses](#), Statistics undergraduate [courses](#), and [faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.

In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):

- EDF 200 (3 units)
- BME 437 (3 units)
- ECI 308, 322, 450, and 465 (10 units)
- EPS 325 (3 units)
- in your senior year, ECI 495C, which meets NAU's senior capstone requirement (12 units)

You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special

You may take these remaining courses from any academic areas, using these courses to pursue your specific interests and goals. We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for more information about our Mathematics undergraduate [courses](#), Statistics undergraduate [courses](#), and [faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

~~To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.~~

~~In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):~~

- ~~• EDF 200 (3 units)~~
- ~~• BME 437 (3 units)~~
- ~~• ECI 308, 322, 450, and 465 (10 units)~~
- ~~• EPS 325 (3 units)~~
- ~~• in your senior year, ECI 495C, which meets NAU's senior capstone requirement (12 units)~~

~~You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona~~

exam.

You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.

Click here for more information about our ECI [undergraduate courses](#), [graduate courses](#), and [faculty](#).

ADD New ->

~~constitution. You may meet this requirement by demonstrating proficiency on a special exam.~~

~~You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.~~

~~Click here for more information about our ECI [undergraduate courses](#), [graduate courses](#), and [faculty](#).~~

SCIENCE AND MATHEMATICS TEACHER PREPARATION SECONDARY EDUCATION

The NAUTeach program prepares secondary science and mathematics teachers for certification to teach in grades 7 through 12. Students pursuing this degree will earn a major in their content area and will be eligible for secondary certification in Arizona. The following degrees are included in this program:

- B.S.Ed. in Biology Secondary Education (Extended major)
- B.S.Ed. in Chemistry Secondary Education (Extended major)
- B.S.Ed. in Earth Science Secondary Education (Extended major)
- B.S.Ed. in General Science Secondary Education (Extended major)
- B.S.Ed. in Mathematics Secondary Education
- B.S.Ed. in Physics Secondary Education (Extended major)

You must have an academic advisor in your major department. In addition, you must meet with an advisor in the NAUTeach program for the teacher-preparation portion of your plan.

Click here for more information about the NAUTeach Program:

<http://www4.nau.edu/cstl/NAUTeach/>

NAUTeach Program Admission:

In order to take NAUTeach courses beyond

TSM 300, you must be admitted to the NAUTeach Program. Program acceptance is required before enrolling in TSM 350.

Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or equivalent). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125 or 125H, 136 or 136H, or equivalent)
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAUTeach program application form.

Admission to Apprentice Teaching: In order to apply for apprentice teaching, you must meet the following requirements:

- Complete and submit the NAUTeach Apprentice Teaching Application.
- Provide evidence that all degree courses will be completed by the time you enroll in TSM 495C and 496C.
- Have a cumulative 2.5 grade point average in all NAU coursework.
- ~~Complete all TSM courses with a grade of C or better.~~
- ~~Successfully complete all signature assessments in TSM 350, 404, and 450.~~ Mathematics B.S.Ed. students must also

~~pass signature assessments in MAT 401 and 402:~~

- Receive an acceptable evaluation of your initial portfolio.
- Take the appropriate AEPA Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Recommended during 6th term. Earth Science majors need to earn a grade of C or better in GLG 445C instead of attempting the AEPA. (Note: Many science majors may earn a second endorsement by passing the General Science AEPA exam.)

Apprentice Teaching: The Apprentice Teaching field experience (TSM 495C) and Seminar (TSM 496C) meets NAU's senior capstone requirement (13 units). To participate in these courses you must:

- Be admitted to Apprentice Teaching.
- Complete all TSM courses (except TSM 495C and 496C) with a grade of C or better.
- Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students must also pass signature assessments in MAT 401 and 402.

Completion of Program: In order to graduate from the NAU Teach program, you must pass TSM 495C, receive a grade of C or better in TSM 496C (based on the successful completion of all signature assessments), and have a grade point average of at least 2.5 in all NAU coursework.

Certifying to Teach in Arizona: In order to gain certification in Arizona to teach mathematics or science, you must meet the following:

- Evidence that you have satisfied the Arizona and Federal Constitution proficiency requirement through special

test OR completion of POS 220 OR
completion of POS 110 and 241.

- You must pass both the AEPA Secondary Professional Knowledge test and the Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Earth Science majors meet this requirement through earning a grade of C or better in GLG 445C).

| Freshman Year | | | | | | | | | |
|------------------------------|---|---|--|---|--|----------------|--|--|--|
| 1 st term | | | | | 2 nd term | | | | |
| MAT 136 | Calculus I | 4 | | MAT 137 | Calculus II | 4 | | | |
| MAT 123 | First Year Seminar | 1 | | MAT 226 | Discrete Mathematics | 3 | | | |
| TSM 101 | Step 1: Inquiry Approaches to Learning | 1 | | ENG 105 | Critical Reading / Writing (FNRQ) | 4 | | | |
| LS/ DIV | Liberal Studies/Diversity **** | 3 | | CS 122 | Programming for Engineering & Science (SCI: SAS) *** | 3 | | | |
| LS | Liberal Studies * | 3 | | TSM 102 | Step 2: Inquiry-Based Lesson Design | 1 | | | |
| GE | General Elective | 3 | | | | | | | |
| NAU 100 | Transition to College | 1 | | | | | | | |
| Total units | | | | 16 | | Total units 15 | | | |
| Sophomore Year | | | | | | | | | |
| 3 rd term | | | | | 4 th term | | | | |
| STA 275 | Statistical Analysis | 3 | | MAT 320W | Foundations of Mathematics | 3 | | | |
| ME | Major Elective ** | 3 | | MAT 185 | Functions, Applications & Explorations | 3 | | | |
| TSM 300 | Knowing and Learning | 3 | | TSM 350 | Classroom Interactions | 3 | | | |
| LS | Liberal Studies (Lab Science) | 4 | | LS | Liberal Studies | 3 | | | |
| LS | Liberal Studies | 3 | | GE | General Elective | 3 | | | |
| Apply to NAU Teach Program | | | | | | | | | |
| Total units | | | | 16 | | Total units 15 | | | |
| Junior Year | | | | | | | | | |
| 5 th term | | | | | 6 th term | | | | |
| MAT 401 | Methods for Teaching Secondary School Mathematics I | 3 | | MAT 402 | Methods for Teaching Secondary School Mathematics II | 3 | | | |
| MAT 365 | Modern Geometry | 3 | | MAT 318 | Elementary Number Theory | 3 | | | |
| ME | Major Elective ** | 3 | | MAT 442C | History & Philosophy of Mathematics | 3 | | | |
| BME 300 | Intro to Structured English Immersion | 3 | | TSM 404 | Research Methods | 3 | | | |
| LS/DIV | Liberal Studies/Diversity**** | 3 | | LS | Liberal Studies | 3 | | | |
| | | | | Attempt AEPA Mathematics Subject Knowledge Test | | | | | |
| Total units | | | | 15 | | Total units 15 | | | |
| Senior Year | | | | | | | | | |
| 7 th term | | | | | 8 th term | | | | |
| MAT411C or MAT 431C | Intro to Abstract Algebra or Intro to Analysis | 3 | | TSM 495C | Apprentice Teaching | 12 | | | |
| TSM 450 | Project-Based Instruction | 3 | | TSM 496C | Seminar | 1 | | | |
| BME 437 | SEI Methods in Secondary School | 3 | | | | | | | |
| LS | Liberal Studies | 3 | | | | | | | |
| GE | General Elective | 3 | | | | | | | |
| Apply to Apprentice Teaching | | | | | | | | | |
| Total units | | | | 15 | | Total units 13 | | | |

Total Credits: 120

Liberal Studies Distribution blocks

| | | | | |
|---------------|---------------|--------------|-------------------|--------------------------------------|
| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 32 total |
| | * | | CS 122 (3) *** | |
| | | | | |

PROGRAM INFORMATION

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

The Liberal Studies Mathematics foundation requirement for this major is waived.

* PSY 101 Introduction to Psychology (SPW) is recommended

** Major electives include 6 units of MAT or STA courses numbered 238 or higher.

*** If you complete a minor in Computer Science, CS 122 is not required, and another liberal studies course is needed

**** Take a Liberal Studies course that also satisfies a Diversity requirement.

NAUTeach Program Admission:

In order to take NAUTeach courses beyond TSM 300, you must be admitted to the NAUTeach Program. Program acceptance is required before enrolling in TSM 350. Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card OR verification of application for fingerprint card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or ENG 101 & 102). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125, 136, or equivalent).
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAUTeach program application form.

You must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate.
See catalog for additional information regarding application for Apprentice Teaching.

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 (32 for mathematics majors as the Mathematics Foundation requirement is waived):
<http://www4.nau.edu/aio/Articulation/LScourcelist.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>
 - 30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU
- English placement: <http://www.nau.edu/comp/placement.html>
- Mathematics placement: <http://www.cefn.s.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml>

CONTACT INFORMATION

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Department Chair: Janet McShane
Phone: 928-523-1252
Email: Janet.McShane@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

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.
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.
 - 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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

This plan addresses two student learning outcomes: content knowledge and process knowledge. Content knowledge implies an understanding of number, algebra, calculus, geometry, discrete mathematics, and statistics. Process knowledge connotes an understanding of and ability to effectively practice the process of teaching. It should include pedagogical knowledge, pedagogical content knowledge, and an ability to communicate effectively in the classroom.

These learning outcomes come directly from standards for secondary teachers of the National Council on the Teaching of Mathematics.

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

There is a critical shortage of secondary science and mathematics teachers throughout the nation and especially in Arizona. According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to current science and mathematics teacher shortages that already exist.

NAU has been selected to receive grant monies for the purpose of replicating a highly successful secondary teacher preparation program for mathematics and science teachers that has been developed by the University of Texas at Austin. Students who complete the NAU Teach Program requirements will complete a series of courses that will replace the current education courses required in the B.S.Ed. degrees.

MAT 185 is a new course required by the NAU Teach program.

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

The goal of the NAU Teach Program is to double the number of graduating secondary mathematics teachers and increase the retention rate when they become practicing teachers. Two master teachers have already been hired and temporary space has been provided in the Chemistry Building. As the number of students in the NAU Teach Program increases, additional master teachers, content teachers, and support staff will be hired and additional space will be needed. This increase in staffing and space has been approved by the President's office and will be initially funded by grant funds, then to be replaced by permanent state funds (as agreed to by the President in an MOU with the granting agency).

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.

This plan will only affect B.S.Ed. degrees in secondary mathematics. The following courses will have reduced numbers of students: EDF 200; ECI 308, 322, 450, and 465; EPS 325. Secondary Mathematics Education students will be taking courses through the NAUTeach Program that have been specifically designed for mathematics secondary teachers.

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

Yes, the materials, texts, and supplemental readings for all new courses in the NAUTeach Program are all available online, through the Center for Science Teaching and Learning, the Department of Mathematics and Statistics, and the Cline Library.

Certifications

Janet M. McShane 20 Oct 2008
Department Chair/ Unit Head (if appropriate) Date
[Signature] 10/20/08
Chair of college curriculum committee Date
[Signature] 10/20/08
Dean of college Date

For committee use only

[Signature] 11/2/08
For University Curriculum Committee Date

Action taken: approved as submitted approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

University Curriculum Committee

Proposal for new Academic Plan, Plan change, or Plan Deletion

| | | | | | | | |
|--|--|---|---|--|--------------------------------------|---|---|
| <p>1. College <u>CEFNS</u></p> <p>3. Academic Plan Name <u>B.S.Ed. General Science – Secondary Education (Extended Major)</u></p> <p>5. Effective Date <u>FALL 2009</u></p> | <p>2. Academic Unit/Department <u>Physics and Astronomy</u></p> <p>4. Subplan (if applicable)? _____</p> | | | | | | |
| <p>6. Is this proposal for a :</p> <table border="0" style="width: 100%;"><tr><td><input type="checkbox"/> New Plan</td><td><input checked="" type="checkbox"/> Plan Change</td><td><input type="checkbox"/> Plan Deletion</td></tr><tr><td><input type="checkbox"/> New Subplan</td><td><input type="checkbox"/> Subplan Change</td><td><input type="checkbox"/> Subplan Deletion</td></tr></table> | | <input type="checkbox"/> New Plan | <input checked="" type="checkbox"/> Plan Change | <input type="checkbox"/> Plan Deletion | <input type="checkbox"/> New Subplan | <input type="checkbox"/> Subplan Change | <input type="checkbox"/> Subplan Deletion |
| <input type="checkbox"/> New Plan | <input checked="" type="checkbox"/> Plan Change | <input type="checkbox"/> Plan Deletion | | | | | |
| <input type="checkbox"/> New Subplan | <input type="checkbox"/> Subplan Change | <input type="checkbox"/> Subplan Deletion | | | | | |

7.

For Plan Changes, place the existing catalog text in this column. Please copy and paste the text directly from the *current* on line academic catalog: (<http://www4.nau.edu/ajio/AcademicCatalog/academiccatalogs.htm>)

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

For New Plans, leave this column blank.

B.S. ED. PHYSICAL SCIENCE: SECONDARY EDUCATION (EXTENDED MAJOR)

This degree prepares you to teach general science at the secondary or middle school level. For certification in high school physics, chemistry, biology or earth science, enroll in one of the content specific B.S.Ed. degree plans.

To earn this degree, complete at least 120 units of coursework, which we describe in the sections that follow:

- at least 35 units of liberal studies requirements Be aware that you may not use courses with a PHS prefix to satisfy these liberal studies requirements.
- at least 58 units of major requirements
- at least 31 units of teacher-preparation requirements
- elective courses, if needed, to reach an overall total of at least 120 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

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.)

B.S. ED. PHYSICAL GENERAL SCIENCE: SECONDARY EDUCATION (EXTENDED MAJOR)

This degree prepares you to teach general science at the secondary or middle school level. For certification in high school physics, chemistry, biology or earth science, enroll in one of the content specific B.S.Ed. degree plans.

To earn this degree, complete at least 120 units of coursework, which we describe in the sections that follow:

- at least 35 units of liberal studies requirements Be aware that you may not use courses with a PHS prefix to satisfy these liberal studies requirements.
- at least ~~58~~ **54** units of major requirements
- at least ~~31~~ **33** units of teacher-preparation requirements
- elective courses, if needed, to reach an overall total of at least 120 units

Be aware that some courses required for your degree may have prerequisites that you must also take. Check the courses in the appropriate subject. (You may be able to count these prerequisites toward your liberal studies or general elective credit.)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a [list of the available diversity courses](#).

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

Additionally, you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.

Finally, please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least 120 units to graduate. Contact your advisor for details.

Also be aware that, for the B.S.Ed. degree, you must have the following:

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent) (If you don't receive a 3.0, you may complete an additional writing course, at the 200 level or above, with at least a B, to meet this requirement.)
- a grade of at least C for the mathematics foundation requirement (generally MAT 110, 114, 125, or 155)

Please note that you must complete NAU's diversity requirements by taking two 3-unit courses, one in ethnic diversity and one in global awareness. These courses may be used to meet other requirements within your academic plan if you choose them carefully. Click here for a [list of the available diversity courses](#).

Also be aware that NAU requires that at least 30 units of the courses you take for your degree must be upper-division courses (those numbered 300 and above).

~~Additionally, you must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.~~

Finally, Please note that you may be able to use some courses to meet more than one requirement; however, you must still meet the total of at least 120 units to graduate. Contact your advisor for details.

Also be aware that, for the B.S.Ed. degree, you must have the following:

- a grade of at least B for the English foundation requirement (ENG 105 or equivalent) (If you don't receive a 3.0, you may complete an additional **ENG** writing course, at the 200 level or above, with at least a B, to meet this requirement.)
- a grade of at least C for the mathematics foundation requirement (~~generally MAT 110, 114, 125, or 155~~) **(MAT 125 or 125H, 136 or 136H, or equivalent)**

MAJOR REQUIREMENTS

Complete the following 58 units:

- PHS 101/101L (4 units)
- PHY 111, 111L, 112, 112L, and 264 (11 units)
- AST 183/184L or AST 180/181 (4 units)
- CHM 151, 151L, 152, 152L (9 units)
- GGR 461 (4 units)
- GLG 101 and 103 (4 units)
- BIO 181:181L, 182, 326, 326LW and 340 (15 units)
- SCI 461 (3 units)
- SCI 308 (1 unit) Teacher Preparation Requirements
- SCI 460C, which meets NAU's senior capstone requirement (3 units)

TEACHER-PREPARATION REQUIREMENTS

Complete 31 units of professional courses offered by the College of Education to qualify for certification to teach physical science in Arizona and most other states.

[Click here for more information about Teacher Preparation in Secondary Education.](#)

- **A grade point average of at least 2.5 in all of your NAU coursework in order to graduate. This requirement applies to all B.S.Ed. majors at NAU.**

MAJOR REQUIREMENTS

Complete the following ~~58~~ **54** units. **You may not count more than one D toward the major requirements for this degree.**

- PHS 101/101L (4 units)
- PHY 111, 111L, 112, 112L, and 264 (11 units)
- AST 183/184L or AST 180/181 (4 units)
- CHM 151, 151L, 152, 152L (9 units).
- GGR 461 (4 units)
- GLG 101 **or 101H** and 103 (4 units)
- BIO 181:181L **or 181H**:181L, 182 **or 182H**, 326, 326LW and 340 (15 units)
- **PHI 359 or 359H (3 units)**
- ~~SCI 461 (3 units)~~
- ~~SCI 308 (1 unit) Teacher Preparation Requirements~~
- ~~SCI 460C, which meets NAU's senior capstone requirement (3 units)~~

~~TEACHER-PREPARATION REQUIREMENTS~~

~~Complete 31 units of professional courses offered by the College of Education to qualify for certification to teach physical science in Arizona and most other states.~~

~~[Click here for more information about Teacher Preparation in Secondary Education.](#)~~

You should also receive advisement from the College of Education for this part of your academic plan.

Please note that, for this major, you substitute SCI 308 for ECI 308. You should also receive advisement from the College of Education for this part of your academic plan.

ADD NEW ->

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit. You may take these remaining courses from any academic areas, using these courses to pursue your specific interests and goals. The following elective courses are strongly recommended

~~You should also receive advisement from the College of Education for this part of your academic plan.~~

~~Please note that, for this major, you substitute SCI 308 for ECI 308. You should also receive advisement from the College of Education for this part of your academic plan.~~

SCIENCE AND MATHEMATICS TEACHER- PREPARATION REQUIREMENTS

You must complete the following 33 units of professional courses to qualify for certification to teach mathematics in Arizona and most other states:

- **TSM 101 and 102 (2 units)**
- **TSM 300, 350, 404, 450 (12 units)**
- **TSM 495C, TSM 496C (13 units)**
- **BME 300 and 437 (6 units)**

TSM 495C and TSM 496C meet NAU's senior capstone requirement. You must have an academic advisor in both your major department and in the NAUTeach program for the teacher-preparation portion of the plan.

[Click here for more information about Science and Mathematics Teacher Preparation in Secondary Education.](#)

[Click here for more information about the NAUTeach Program:](http://www4.nau.edu/cstl/NAUTeach/)
<http://www4.nau.edu/cstl/NAUTeach/>

GENERAL ELECTIVES

Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit. You may take these remaining courses from any academic areas, using these courses to pursue your specific interests and goals. The following elective courses are strongly recommended

for this major:

GLG304, PHI359, CHM230, CHM320

We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for [Physics undergraduate courses](#), here for [Astronomy undergraduate courses](#), and here for [Physical Sciences undergraduate courses](#).

Click here for [Physics and Astronomy faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.

In addition, you must take the following 31 units in one of two plan options—a traditional two-term plan that offers flexible scheduling or the one-term integrated secondary teacher education plan (I-STEP):

- EDF 200 (3 units)
- BME 437 (3 units)
- ECI 308, 322, 450, and 465 (10 units)
- EPS 325 (3 units)
- in your senior year, ECI 495C, which meets NAU's senior capstone

for this major:

GLG 304, PHI359, CHM 230, CHM 320

We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)

Click here for [Physics undergraduate courses](#), here for [Astronomy undergraduate courses](#), and here for [Physical Sciences undergraduate courses](#).

Click here for [Physics and Astronomy faculty](#).

TEACHER PREPARATION SECONDARY EDUCATION

~~To teach in grades 7 through 12, you must have a teaching major and a teaching minor or an extended teaching major in another department. Refer to the academic area in which you plan to major (for example, chemistry or English) for information about specific requirements for your major and/or minor, such as special methods courses or other requirements. In addition, you must be admitting to the College of Education's teacher-education plan.~~

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- ~~• EDF 200 (3 units)~~
- ~~• BME 437 (3 units)~~
- ~~• ECI 308, 322, 450, and 465 (10 units)~~
- ~~• EPS 325 (3 units)~~
- ~~• in your senior year, ECI 495C, which meets NAU's senior capstone~~

requirement (12 units)

You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special exam.

You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.

Click here for more information about our [ECI undergraduate courses](#), [graduate courses](#), and [faculty](#).

ADD NEW ->

(under revision)

requirement (12 units)

~~You may also take POS 220 (or POS 110 and 241) to satisfy Arizona certification requirements for the federal and Arizona constitution. You may meet this requirement by demonstrating proficiency on a special exam:~~

~~- You must have an academic advisor in both your major and minor departments. In addition, the College of Education's advisement office offers advisement for your teacher-preparation plan after you apply to the plan.~~

~~- Click here for more information about our [ECI undergraduate courses](#), [graduate courses](#), and [faculty](#).~~

SCIENCE AND MATHEMATICS TEACHER PREPARATION SECONDARY EDUCATION

The NAUTeach program prepares secondary science and mathematics teachers for certification to teach in grades 7 through 12. Students pursuing this degree will earn a major in their content area and will be eligible for secondary certification in Arizona. The following degrees are included in this program:

- B.S.Ed. in Biology Secondary Education (Extended major)
- B.S.Ed. in Chemistry Secondary Education (Extended major)
- B.S.Ed. in Earth Science Secondary Education (Extended major)
- B.S.Ed. in General Science Secondary Education (Extended major)
- B.S.Ed. in Mathematics Secondary Education
- B.S.Ed. in Physics Secondary Education (Extended major)

You must have an academic advisor in your major department. In addition, you must meet with an advisor in the NAUTeach program for the teacher-preparation portion

of your plan.

Click here for more information about the NAUTeach Program:

<http://www4.nau.edu/cstl/NAUTeach/>

NAUTeach Program Admission:

In order to take NAUTeach courses beyond TSM 300, you must be admitted to the NAUTeach Program. Program acceptance is required before enrolling in TSM 350.

Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or equivalent). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125 or 125H, 136 or 136H, or equivalent)
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAUTeach program application form.

Admission to Apprentice Teaching: In order to apply for apprentice teaching, you must meet the following requirements:

- Complete and submit the NAUTeach Apprentice Teaching Application.
- Provide evidence that all degree

courses will be completed by the time you enroll in TSM 495C and 496C.

- Have a cumulative 2.5 grade point average in all NAU coursework.
- ~~Complete all TSM courses with a grade of C or better.~~
- ~~Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students must also pass signature assessments in MAT 401 and 402.~~
- Receive an acceptable evaluation of your initial portfolio.
- Take the appropriate AEPA Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Recommended during 6th term. Earth Science majors need to earn a grade of C or better in GLG 445C instead of attempting the AEPA. (Note: Many science majors may earn a second endorsement by passing the General Science AEPA exam.)

Apprentice Teaching: The Apprentice Teaching field experience (TSM 495C) and Seminar (TSM 496C) meets NAU's senior capstone requirement (13 units). To participate in these courses you must:

- Be admitted to Apprentice Teaching.
- Complete all TSM courses (except TSM 495C and 496C) with a grade of C or better.
- Successfully complete all signature assessments in TSM 350, 404, and 450. Mathematics B.S.Ed. students must also pass signature assessments in MAT 401 and 402.

Completion of Program: In order to graduate from the NAU Teach program, you must pass TSM 495C, receive a grade of C or better in TSM 496C (based on the successful completion of all signature assessments), and have a grade point average of at least 2.5 in all NAU coursework.

Certifying to Teach in Arizona: In order to gain certification in Arizona to teach mathematics or science, you must meet the following:

- Evidence that you have satisfied the Arizona and Federal Constitution proficiency requirement through special test OR completion of POS 220 OR completion of POS 110 and 241.
- You must pass both the AEPA Secondary Professional Knowledge test and the Subject Knowledge test (Biology, Chemistry, General Science, Mathematics, or Physics). Earth Science majors meet this requirement through earning a grade of C or better in GLG 445C).

| Freshman Year | | | | | |
|----------------------|--|---|----------------------|-------------------------------------|---|
| 1 st term | | | 2 nd term | | |
| PHS 101 | Physical Science in Everyday Life (SCI: SAS) | 3 | PHY 111 | General Physics I (SCI: SAS) | 3 |
| PHS 101L | Physical Science Lab | 1 | PHY 111L | General Physics I Lab | 1 |
| CHM 151 | General Chemistry I (SCI: LAB) | 4 | CHM 152 | General Chemistry II (SCI: SAS) | 3 |
| CHM 151L | General Chemistry Lab (SCI: LAB) | 1 | CHM 152L | General Chemistry II Lab | 1 |
| PHY 103 | First Year Seminar | 1 | ENG 105 | Critical Reading & Writing (FRNQ) | 4 |
| MAT 125 | Pre-Calculus (FNRQ) | 4 | TSM 102 | Step 2: Inquiry-Based Lesson Design | 1 |
| TSM 101 | Step 1: Inquiry Approaches to Teaching | 1 | LS | Liberal Studies* | 3 |
| Total units | | | Total units | | |
| 15 | | | 16 | | |

| Sophomore Year | | | | | |
|----------------------------|-------------------------------|---|----------------------|--|---|
| 3 rd term | | | 4 th term | | |
| PHY 112 | General Physics II (SCI: SAS) | 3 | BIO 182 | Unity of Life II | 4 |
| PHY 112L | General Physics II Lab | 1 | AST 180 or 183 | Introduction to Astronomy or Life in the Universe (SCI: SAS) | 3 |
| BIO 181 | Unity of Life (SCI: SAS) | 3 | AST 181 or 184L | Astronomy or Life in the Universe Lab | 1 |
| BIO 181L | Unity of Life Lab | 1 | TSM 350 | Classroom Interactions | 3 |
| TSM 300 | Knowing & Learning | 3 | LS/DIV | Liberal Studies/Diversity *** | 3 |
| LS | Liberal Studies | 3 | GE | General Elective** | 3 |
| Apply for NAUTeach Program | | | | | |
| Total units | | | Total units | | |
| 14 | | | 17 | | |

| Junior Year | | | | | |
|----------------------|-----------------------------|---|---|---------------------------------------|---|
| 5 th term | | | 6 th term | | |
| BIO 326 | Ecology | 3 | PHY 264 | Electronics for Science Students | 3 |
| BIO 326LW | Ecology Lab | 1 | BIO 340 | Genetics & Evolution | 3 |
| GLG 101 | Physical Geology (SCI: SAS) | 3 | TSM 404 | Research Methods | 3 |
| GLG 103 | Physical Geology Lab | 1 | BME 300 | Intro to Structured English Immersion | 3 |
| PHI 359 | Philosophy of Science (AHI) | 3 | LS | Liberal Studies | 3 |
| GE | General Elective** | 3 | Attempt AEPA General Science Subject Knowledge Test | | |
| Total units | | | Total units | | |
| 14 | | | 15 | | |

| Senior Year | | | | | |
|------------------------------|-------------------------------------|-------------|----------------------|---------------------|----|
| 7 th term | | | 8 th term | | |
| GGR 461 | Fundamentals of Weather and Climate | 4 | TSM 495C | Apprentice Teaching | 12 |
| BME 437 | SEI Methods in Secondary Schools | 3 | TSM 496C | Seminar | 1 |
| TSM 450 | Project-Based Instruction | 3 | | | |
| LS/DIV | Liberal Studies/Diversity *** | 3 | | | |
| GE | General Elective ** | 3 | | | |
| Apply to Apprentice Teaching | | | | | |
| | | Total units | 16 | Total units | 13 |

Total:

120

Liberal Studies Distribution blocks

| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 35 total |
|---------------|---------------|--------------|-------------------|--------------------------------------|
| PHI 359 | * | | CHM 151 & L (5) | |
| | | | CHM 152 (3) | BIO 181 (3) |

PROGRAM INFORMATION

A minimum of 120 units are required for this degree. No more than one D is allowed in the major requirements.

* PSY 101 (SPW) recommended

** GLG 304, CHM 230 or CHM 320 are recommended for the general elective

*** Take a Liberal Studies course that also satisfies a Diversity requirement.

NAU Teach Program Admission:

In order to take NAU Teach courses beyond TSM 300, you must be admitted to the NAU Teach Program. Program acceptance is required before enrolling in TSM 350. Admission requirements are as follows:

- Completion of TSM 101 and 102 with a grade of C or better.
- Enrollment in TSM 300 Knowing and Learning.
- Copy of fingerprint clearance card OR verification of application for fingerprint card.
- Completion of 30 units of coursework which includes:
 - a grade of at least B for the English foundation requirement (ENG 105 or ENG 101 & 102). If you don't receive a 3.0, you may complete an additional English writing course, at the 200 level or above, with at least a B, to meet this requirement.
 - a grade of at least C for the Mathematics foundation requirement (MAT 125, 136, or equivalent).
 - completion of at least three units of content major work.
- A minimum grade point average of 2.5 in all content major course work.
- A declared science or mathematics B.S.Ed. major.
- Completion of the NAU Teach program application form.

You must have a grade point average of at least 2.5 in all of your NAU coursework in order to graduate. See catalog for additional information regarding application for Apprentice Teaching.

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/LScourselist.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>
- 30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU
- English placement: <http://www.nau.edu/comp/placement.htm>
- Math placement: <http://www.cefn.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml>

CONTACT INFORMATION

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 Building 19, Room 209
 Phone: 928-523-2661
 Department Chair: David Cornelison
 Phone: 928-523-7641
 EMAIL: David.Cornelison@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

8. 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.

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.

10. Please list the Learning Outcomes of the Plan/Subplan (see degree major assessment webpage - <http://www4.nau.edu/assessment/main/degree/degree.htm>).

Learning outcomes for the B.S.Ed. program are specified by NCATE. They include the application of the following learning outcomes to the science classroom: Content Knowledge, Nature of Science, Inquiry, Science-Technology-Society Issues, General Skills of Teaching, Curriculum, Science in the Community, Assessment, Safety and Welfare, Professional Growth, Technology, and Diversity.

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

There is a critical shortage of secondary science and mathematics teachers throughout the nation and especially in Arizona. According to the Department of Education, Arizona will need an additional 389 mathematics teachers and 239 science teachers each year just to meet the increased Arizona graduation requirements. This number is in addition to current science and mathematics teacher shortages that already exist.

NAU has been selected to receive grant monies for the purpose of replicating a highly successful secondary teacher preparation program for mathematics and science teachers that has been developed by the University of Texas at Austin. Students who complete the NAU Teach Program requirements will complete a series of courses that will replace the current education courses required in the B.S.Ed. degrees.

The name of this degree has been changed so that the degree title matches the state certification title. The state no longer provides a certification in Physical Science, only in General Science. This program of study meets the state's criteria for the General Science Certification.

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

Presently, NAU graduates about a dozen mathematics and science secondary teachers each year. The goal of the NAU Teach Program is to increase this number to 60 or more. Two master teachers have already been hired and temporary space has been provided in the Chemistry Building. As the number of students in the NAU Teach Program increases, additional master teachers, content teachers, and support staff will be hired and some additional space will be needed. This increase in staffing and space has been approved by the President's office and will be initially funded by grant funds, then to be replaced by permanent state funds (as agreed to by the President in an MOU with the granting agency).

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.

This plan will only affect B.S. Ed. in secondary science and mathematics degrees. The NAU Teach Program should increase the numbers of B.S. Ed. math and science students that are graduated each year. The addition of PHI 359, Philosophy of Science, will be required. A letter of support from the Department of Philosophy is attached.

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


Yes, the materials, texts, and supplemental readings for all new courses in the NAU Teach Program are all available online, through the Center for Science Teaching and Learning, the Department of Mathematics and Statistics, and the Cline Library.

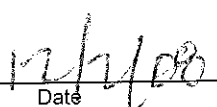
Certifications

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

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

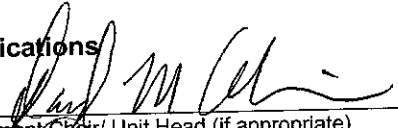
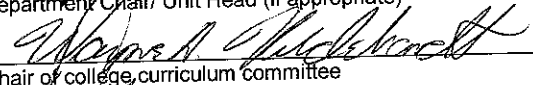
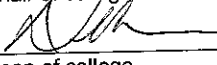
13. Will this academic plan/subplan affect other majors, liberal studies course offerings, plans/subplans, curricula, or enrollment at NAU? If so, attach supporting documentation from the affected departments/units and college dean.

This plan will only affect B.S. Ed. in secondary science and mathematics degrees. The NAU Teach Program should increase the numbers of B.S. Ed. math and science students that are graduated each year. The addition of PHI 359, Philosophy of Science, will be required. A letter of support from the Department of Philosophy is attached.

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

Yes, the materials, texts, and supplemental readings for all new courses in the NAU Teach Program are all available online, through the Center for Science Teaching and Learning, the Department of Mathematics and Statistics, and the Cline Library.

Certifications

| | |
|---|----------|
|  | 10-20-04 |
| Department Chair/ Unit Head (if appropriate) | Date |
|  | 10/20/08 |
| Chair of college curriculum committee | Date |
|  | 10/20/08 |
| Dean of college | Date |

For committee use only

| | |
|-------------------------------------|------|
| _____ | Date |
| For University Curriculum Committee | |

Action taken: _____ approved as submitted _____ approved as modified

Note: Submit original to associate provost's office. That office will provide copies to the college dean, department chair, and Academic Information Office after approval.

Hi Nicole,
We have rounded up the effective date for the following LS designation DELETIONS.

MS 102
Block: Social & Political Worlds
Effective date: Fall 2009

ANT 390
Block: Social & Political Worlds
Effective date: Spring 2009

SWS 250
Block: Social & Political Worlds
Effective date: Spring 2009

Thanks!

Blase

Blase S. Scarnati, Ph.D.
Director, First Year Seminar Program

The following two Senior Capstone courses were reviewed by the LSC and are approved.

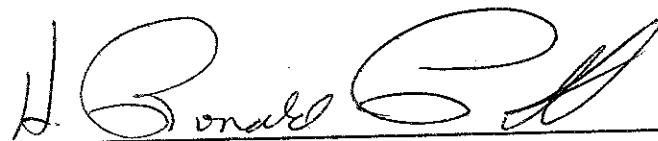
TSM 495C: Apprentice Teaching

TSM 496C: Apprentice Teaching Seminar

Thanks!

Blase

Blase S. Scarnati, Ph.D.
Director, First Year Seminar Program



12-2-08

UCC Approved

Distributed to start a discussion on departmental/master syllabi at 10/21/2008 UCC meeting.

TEMPLATE FOR DEPARTMENTAL COURSE SYLLABUS – SUGGESTED FORMAT

General Information

- Name of college and department
- Course prefix, number, and title
- *Semester in which course will be offered*
- *Clock hours, credit hours*
- *Instructor's name*
- *Office address*
- *Office hours*

Catalog description (not necessary for individual section syllabi)

Course prerequisites

Course description (**more expansive than catalog description; may be combined with structure and approach below both in this departmental syllabus and in individual section syllabi**)

Student Learning Expectations/Outcomes for this Course (**individual section syllabus may contain expanded or additional outcomes**)

General departmentally adopted course structure/approach (individual section syllabus should particularize this to that section)

Possible textbook and required materials

Possible *recommended* optional materials/references (attach reading list)

Course outline (**List of topics in intended order of coverage; in individual section syllabi this should be a timeline as well**)

Assessment of Student Learning Outcomes

- Methods of Assessment
- Timeline for Assessment
- **Relation to Particular Learning Objectives (which items assess which objectives)**

Grading System

Course policy

- *Retests/makeup tests*
- *Attendance*
- *Statement on plagiarism and cheating*

University policies: Attach the Safe Working and Learning Environment, Students with Disabilities, Institutional Review Board, and Academic Integrity policies or reference them on the syllabus. See the following document for policy statements: <http://jan.ucc.nau.edu/academicadmin/plcystmt.html>.

Other

Presented to initiate discussion and consideration of departmental syllabi: 10/21/08

**TEMPLATE FOR MASTER COURSE SYLLABUS
TO ACCOMPANY COURSE PROPOSALS SUBMITTED FOR UCC REVIEW**

*Bold are proposed
for Master
Syllabus*

General Information

- **Name of college and department**
- **Course prefix, number, and title**
- *Semester in which course will be offered*
- *Clock hours, credit hours* — **BOLD**
- *Instructor's name*
- *Office address*
- *Office hours*

Catalog description

Course prerequisites

Course description

Expanded description if warranted: specify nature of the course as approved by the academic unit.

Student Learning Expectations/Outcomes for this Course:

Upon completion of the course students will be able to:

[describe with action verbs]

Course structure/approach (To the extent specified by the academic unit. May be very general in nature for the master syllabus, but should include features expected by the academic unit.)

Textbook and required materials — **Bold?**

Recommended optional materials/references (attach reading list)

Course outline (List of core topics as approved by the academic unit)

Assessment of Student Learning Outcomes (May be very general but should indicate the nature of assessments and relationship to learning outcomes expected by the academic unit)

- *Methods of Assessment*
- *Timeline for Assessment*

Grading System

Course policy

- *Retests/makeup tests*
- *Attendance*
- *Statement on plagiarism and cheating*
- ~~*Statement on objectionable language*~~

University policies: Attach the Safe Working and Learning Environment, Students with Disabilities, Institutional Review Board, and Academic Integrity policies or reference them on the syllabus. See the following document for policy statements: <http://jan.ucc.nau.edu/academicadmin/plcvstmt.html>.

Other

For consideration and action at the UCC meeting of December 2, 2008

**TEMPLATE FOR MASTER COURSE SYLLABUS
TO ACCOMPANY COURSE PROPOSALS SUBMITTED FOR UCC REVIEW**

The emboldened items on the attached template are required components of a master syllabus for a course. The master syllabus, once approved by the UCC, should be kept on file by the offering unit. It represents the approved nature of the course. The components listed on the template are the aspects of the course that are reviewed and approved by the UCC. Individual units may require additional items in a master syllabus, and may arrange items differently than suggested here.

A proposal requesting liberal studies value for the course must contain additional features as described in the proposal submission information on the Liberal Studies website.

The committee does not want to see a syllabus that will be distributed in a single section of the course on the first day of classes. Such syllabi must contain in addition all features of the approved syllabus template, that is, all items including the italicized items in light font on the attached template, and may contain additional details such as additional student learning outcomes, particular information about the structure and approach of the individual section, etc.

UCC MEETING

12-2-08

| <u>NAME</u> (Print Last Name) | <u>DEPT.</u> |
|---------------------------------|---------------|
| Don Bell | |
| Eric Bradford | AIO |
| Fred Summerfelt | CHHS |
| Peggy Pallek | CEFRS/Bio |
| John Georgas | CEFRS/CS |
| Patrick BATTLES | THEATRE |
| Steve Brown | Music |
| Rick Stauer | MUSIC |
| Dalai Dejan | Dustane Loney |
| Azrael | PHYSICS |
| Richard J. McNeil | WA Franke |
| TODD FIRTH (for Eileen Mahoney) | GSSC |
| Catherine Petersew | Library |
| Kathryn Kozak | CCC |
| Darrelle Martin | AIO |
| Chia Williams | AIO |
| Shirley Rogers | AIO |
| Kathleen Criff | SBS |
| Frances Riemer | SBS |