Agenda
Campus Curricula Committee Meeting
December 1, 2009 Meeting
3:15 p.m. Room 117 Fulton Hall

Approval of November 6, 2009 minutes.

**Review of submitted DC forms:**
DC 0340, Environmental Engineering, Bachelor of Science, effective Fall 2010.

DC 0341, Biological Sciences, Bachelor of Arts, effective Spring 2010

DC 0342, Biological Sciences, Bachelor of Arts, Pre-Medicine Emphasis Area, effective Spring 2010.

DC 0343, Biological Sciences, Bachelor of Arts, Secondary Education Emphasis Area, effective Spring 2010.

DC 0344, Biological Sciences, Bachelor of Science, effective Spring 2010.

**Review of submitted CC forms:**
CC 7845, Electrical Engineering 405, Power System Protection, effective Fall 2010.

CC 7846, Electrical Engineering 404, Economic Operation of Power systems, effective Fall 2010.

CC 7847, Petroleum Engineering 406, Advanced Reservoir Simulation, effective Spring 2010.


CC 7850, Geological Engineering 349, Comp Appl in Geol Engr, effective Spring 2010.

CC 7851, Geological Engineering 351, Geological Eng Case Hist, effective Spring 2010.


CC 7858, IST 368, Law and Ethics in E-Commerce, effective Fall 2010.

CC 7859, Business 110, Management and Organizational Behavior, effective Fall 2010.

CC 7860, Business 120, Financial Accounting, effective Fall 2010.

CC 7861, Business 320, Managerial Accounting, effective Fall 2010.

CC 7862, Business 360, Business Operations, effective Fall 2010.

CC 7863, Business 380, Strategic Management, effective Fall 2010.

CC 7864, ERP 246, Introduction to Enterprise Resource Planning, effective Fall 2010.

CC 7865, Finance 250, Corporate Finance I, effective Fall 2010.

CC 7866, IST 223, Database Management, effective Fall 2010.

CC 7867, IST 241, E-Commerce, effective Fall 2010.

CC 7868, IST 354, Multi-Media Development and Design, effective Fall 2010.


CC 7873, Aerospace Engineering 341, Exper Stress Analysis I, effective Spring 2010.

CC 7875, Mechanical Engineering 337, Atmospheric Science, effective Spring 2010.

CC 7876, Mechanical Engineering 341, Experimmtl Stress Analysis I, Spring 2010.

CC 7877, Mechanical Engineering 345, Non-Intrusive Meas Meth, effective Spring 2010.


CC 7879, Biological Sciences 315, Developmental Biology, effective Spring 2010.

CC 7880, Biological Sciences 345, Comparative Chordate Anatomy, effective Spring 2010.

CC 7881, Ceramic Engineering 407, Bhvr-Mtls Vi-Mechanical, effective Spring 2010.

CC 7882, Metallurgical Engineering 351, Min proc II Flo & Hydro, effective Spring 2010.

CC 7883, Metallurgical Engineering 455, Chemical Metallurgy, effective Spring 2010.

CC 7884, Civil Engineering 432, Turbine-Opn Chnnel flow, effective Spring 2010.

CC 7885, Civil Engineering 466, Wastewater Treatment II, effective Spring 2010.

CC 7886, Civil Engineering 491, Internship, effective Spring 2010.

CC 7887, Civil Engineering 499, Case Studies in Civ Engr, effective Spring 2010.

**Review of submitted EC forms:**
EC 2210, Mining Engineering 401, Geostatistics, effective Spring 2011.

EC 2211, Petroleum Engineering 301, effective Fall 2010.


EC 2214, Civil Engineering 301, Concrete Pavement Design, effective Spring 2010.

EC 2215, Civil Engineering 301, Structural Dynamics, effective Spring 2010.

EC 2216, Civil Engineering 401, Special Concretes, effective Spring 2010.

EC 2220, Nuclear Engineering 401, Electrical Engineering 401, effective Spring 2010.


EC 2223, Biological Sciences 401, Advanced Nanobiotechnology, effective Spring 2010.

Degree Change Form (DC)

This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:
Bachelor of Science in Environmental Engineering

Department: Civil, Architectural and Environmental Engineering

Briefly describe action requested (Attach documentation as appropriate):
This change resulted from review of assessment data. Revised curricula and flow chart are attached, no CC forms are required as no changes to classes are involved.

Summary of Changes:
1) Add IDE 110, 120 and 150
2) Drop both Free electives to balance hours with IDE 110, 120, and 150 addition.
3) Replace IDE 140 with IDE 50. Reason: Statics and Dynamics, IDE 110 and IDE 150, require IDE 50 (Static)
4) Add CE 215 as a technical elective.
5) Drop ME 227 towards thermodynamics requirement, now requiring only ChE 141. Previous requirement was ME 227 or ChE 141; no change to total hours.
6) Add ChE 237 as a depth elective.

Recommended by Department: ____________________________
(Chair signature) Date: 9/28/09

Recommended by Discipline Specific Curricula Committee: ____________________________
(Chair signature) Date: 10/19/09

Approved by Curricula Committee: ____________________________
(Chair signature) Date: ____________

Approved by Faculty Senate: ____________________________
(Chair signature) Date: ____________

09/28/09

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# Environmental Engineering Bachelor of Science

## Freshman Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>First</td>
<td>FE 10-Study &amp; Careers in Eng.</td>
<td>1</td>
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<tr>
<td></td>
<td>Chem 1,2-Gen Chem</td>
<td>5</td>
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<tr>
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<td>Math 14-Calculus for Engineers I</td>
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<td>English 20-Expos &amp; Argumentation</td>
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<td>General Education Elective.</td>
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<td>Second</td>
<td>IDE 20-Eng Design w/Cmp Apps</td>
<td>3</td>
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<td></td>
<td>Math 15-Calculus for Engineers II</td>
<td>4</td>
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<tr>
<td></td>
<td>Phy 23-Engineering Physics I</td>
<td>4</td>
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<td>General Education Elective.</td>
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## Sophomore Year

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<th>Semester</th>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>First</td>
<td>IDE 140-Statics &amp; Dynamics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Math 22-Calculus w/Analytic Geo III</td>
<td>4</td>
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<tr>
<td></td>
<td>EnVE 261-Intro to Env Engr &amp; Sci</td>
<td>3</td>
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<tr>
<td></td>
<td>Chem 3 or Geo 275-Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Bio Sc 110-General Biology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>Second</td>
<td>Chem 120-Chem Eng Mat Bal</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EnVE 262-Env Eng Bio Fund</td>
<td>3</td>
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<tr>
<td></td>
<td>CE 230-Elm Fluid Mech.</td>
<td>4</td>
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<tr>
<td></td>
<td>Phys 24-Engineering Physics II</td>
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<tr>
<td></td>
<td>Math 204-Elm Diff Equations</td>
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## Junior Year

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<th>Semester</th>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>First</td>
<td>EnVE 265-Water &amp; Wastewater Eng.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EnVE 263-Env Eng Chem Fund</td>
<td>3</td>
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<tr>
<td></td>
<td>Stat 213-Applied Eng Stat</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GE 50-Geology for Engineers</td>
<td>3</td>
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<tr>
<td></td>
<td>Communications Elective.</td>
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<td><strong>Total</strong></td>
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<td>Second</td>
<td>EnVE Depth Elective</td>
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<td></td>
<td>EnVE 369-Sanitary Design</td>
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<tr>
<td></td>
<td>CE 234-Hydraulic Eng</td>
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<tr>
<td></td>
<td>Chem 141-or ME 237-Thermal Analysis</td>
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<tr>
<td></td>
<td>General Education Elective.</td>
<td>3</td>
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<td></td>
<td><strong>Total</strong></td>
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## Senior Year

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<th>Semester</th>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>CE 248-Contracts &amp; Construc Eng</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EnVE 210-Senior Seminar</td>
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<tr>
<td></td>
<td>EnVE Air Pollution Elective.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EnVE Technical Elective.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Hist 270-History of Technology</td>
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</tr>
<tr>
<td></td>
<td><strong>Free Elective</strong></td>
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</tr>
<tr>
<td>Second</td>
<td>EnVE 298-CE Design Project</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EnVE Depth Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EnVE Depth Elective</td>
<td>3</td>
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<tr>
<td></td>
<td>EnVE Technical Elective.</td>
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<tr>
<td></td>
<td>EnVE 269-Research in Env Eng</td>
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<tr>
<td></td>
<td><strong>Free Elective</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

In red: IDE 140 is dropped and replaced with IDE 50, 110, 120, and 150. The six added hours are balanced by free electives.
Effective Year: 2010
Effective Term: Summer ☐ Fall ☐ Spring ☒
(Creating or modifying a degree program must be effective for a Fall term)

Degree Change Form (DC)

This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:
Bachelor of Arts, Biological Sciences

Department: Biological Sciences

Briefly describe action requested (Attach documentation as appropriate):
We are updating our curriculum to reflect the change in credit hours for organic chemistry classes
that are required for our students. These classes (Chem 221 and Chem 223) recently changed
from 3 to 4 credit hours each.

We are also including another option for the Computer Science/Statistics requirement for this
degree. We now give students the option to take Comp Sci 074 and 078 rather than Comp Sci
053.

Finally, we are editing the last section of the degree requirements to state (more generally) that
enough electives are required to obtain a total of 120 credit hours. This is a change in wording (to
be simpler), rather than a real change in requirements.

Please note the minor changes (in red) on the following page.

Recommended by Department: [Signature]
(Chair signature)
Date: 10/11/09

Recommended by: [Signature]
Discipline Specific Curricula Committee
(Chair signature)
Date: 10/3/2009

Approved by Curricula Committee:
(Chair signature)
Date: 

Approved by Faculty Senate: 
(Chair signature)
Date: 

Revised 1/31/2008
Bachelor of Arts
Biological Sciences
Degree Requirements

Specific requirements for the B.A. degree in biological sciences include a minimum of 120 semester hours of credit, including 30 hours of biology core courses.

Core Courses Credit
Bio Sc 102-Intro to Bio Sc ........................................... 1
Bio Sc 110-Gen Bio or Bio Sc 111-Princ Bio .................... 3
Bio Sc 122-Gen Bio Lab .................................................. 2
Bio Sc 113-Biodiversity .................................................. 3
Bio Sc 114-Biodiversity Lab ......................................... 1
Bio Sc 211-Cell Biology .................................................. 3
Bio Sc 212-Cell Biology Lab ........................................... 1
Bio Sc 231-Gen Genetics ............................................... 3
Bio Sc 251-Ecology ....................................................... 3
Bio Sc 310-Seminar ....................................................... 1
Advanced courses, 200 level or higher (at least one with laboratory and one 300 level) .................. 9

Chemistry
Chem 1,2,3, & 4-General Chem ................................. 9
Chem 221 & 223- Org Chem ........................................... 8

Mathematics & Physical Science
Various courses in mathematics, physics, and/or geology chosen in consultation with academic adviser.
(Note: Proficiency in College Algebra must be demonstrated by a grade of "C" or better in a College Algebra course or by examination. .................. 9

Computer Science/Statistics (One of the following)
Cmp Sc 053 or 074/078 ............................................... 3
Stat 115-Stat for Soc Sci ............................................. 3
Stat 211-Stat Tools for Decision Making .................. 3

General Requirements for BA
English Composition (English 20 and one additional composition course) .............................................. 6
Western Civilizations (History 111 and 112) .......... 6
Foreign Language (three semesters of a foreign language) ................................................................. 12
Humanities ................................................................. 12
Social Sciences .......................................................... 12

Elective credits: In consultation with his or her advisor, each student will elect sufficient additional courses to complete a minimum of 120 credit hours.
Bachelor of Arts
Biological Sciences
Degree Requirements

Specific requirements for the B.A. degree in biological sciences include a minimum of 120 semester hours of credit, including 30 hours of biology core courses.

Core Courses Credit
Bio Sc 102-Intro to Bio Sc .................................. 1
Bio Sc 110-Gen Bio or Bio Sc 111-Princ Bio ................ 3
Bio Sc 112-Gen Bio Lab ........................................ 2
Bio Sc 113-Biodiversity ........................................ 3
Bio Sc 114-Biodiversity Lab ................................... 1
Bio Sc 211-Cell Biology ......................................... 3
Bio Sc 212-Cell Biology Lab ................................... 1
Bio Sc 231-Gen Genetics ....................................... 3
Bio Sc 251-Ecology ............................................. 3
Bio Sc 310-Seminar ............................................. 1
Advanced courses, 200 level or higher (at least one with laboratory and one 300 level) ........................................... 9

Chemistry
Chem 1,2,3, & 4-General Chem ............................. 9
Chem 221 & 223-Org Chem .......................................... 6

Mathematics & Physical Science
Various courses in mathematics, physics, and/or geology chosen in consultation with academic adviser.
(Nota: Proficiency in College Algebra must be demonstrated by a grade of "C" or better in a College Algebra course or by examination) ................................. 9

Computer Science/Statistics (One of the following)
Cmp Sc 053-Intro to Prog ...................................... 3
Stat 115-Stat for Soc Sci ....................................... 3
Stat 211-Stat Tools for Decision Making .................. 3

General Requirements for BA
English Composition (English 20 and one additional composition course) .......................... 6
Western Civilizations (History 111 and 112) .......................... 6
Foreign Language (three semesters of a foreign language) ..................................................... 12
Humanities ......................................................... 12
Social Sciences ..................................................... 12
Electives ......................................................... 15
Total 120 hours
Effective Year: 2010
Effective Term: Summer □ Fall □ Spring □
(Creating or modifying a degree program must be effective for a Fall term)

Degree Change Form (DC)

This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:
Bachelor of Arts, Pre-Medicine Emphasis Area, Biological Sciences

Department: Biological Sciences

Briefly describe action requested (Attach documentation as appropriate):
We are updating our curriculum to reflect the change in credit hours for organic chemistry classes that are required for our students. These classes (Chem 221 and Chem 223) recently changed from 3 to 4 credit hours each. Please note the minor changes (in red) on the following page.

Recommended by Department: __________________________
(Chair signature)

Date: ________

Recommended by: __________________________
(Discipline Specific Curricula Committee) (Chair signature)

Date: 11/3/2009

Approved by Curricula Committee: __________________________
(Chair signature)

Date: ________

Approved by Faculty Senate: __________________________
(Chair signature)

Date: ________

10/08/09

(Revised 1/31/2009)
Bachelor of Arts
Biological Sciences
Pre-Medicine Emphasis Area
Degree Requirements

The student will fulfill the requirements for a Bachelor of Arts in Biological Sciences as outlined above. The following classes are also required: Chem 226 & 228 (Org Chem labs), 2 semester of College (General) Physics and labs (Phy 31 (21), 22, 35 (25), 26), courses in Human Anatomy (Bio Sc 241), Human Physiology and Lab (Bio Sc 242/243) and Biochemistry (Chem 351) are highly recommended.

NOTE: No changes to catalog entry, but CAPS report should reflect changes to B.A. curriculum (see next page), which is being amended with a different DC form.
Bachelor of Arts
Biological Sciences
Degree Requirements

Specific requirements for the B.A. degree in biological sciences include a minimum of 120 semester hours of credit, including 30 hours of biology core courses.

Core Courses Credit
Bio Sc 102-Intro to Bio Sc ........................................... 1
Bio Sc 110-Gen Bio or Bio Sc 111-Princ Bio .................. 3
Bio Sc 112-Gen Bio Lab ........................................... 2
Bio Sc 113-Biodiversity ........................................... 3
Bio Sc 114-Biodiversity Lab ..................................... 1
Bio Sc 211-Cell Biology ........................................... 3
Bio Sc 212-Cell Biology Lab .................................... 1
Bio Sc 231-Gen Genetics ......................................... 3
Bio Sc 251-Ecology ............................................... 3
Bio Sc 310-Seminar ............................................... 1
Advanced courses, 200 level or higher (at least one with laboratory and one 300 level) ......................... 9

Chemistry
Chem 1,2,3, & 4-General Chem .................................. 9
Chem 221 & 223-Org Chem .................................... 8

Mathematics & Physical Science
Various courses in mathematics, physics, and/or geology chosen in consultation with academic adviser.
(Note: Proficiency in College Algebra must be demonstrated by a grade of "C" or better in a College Algebra course or by examination.) ................. 9

Computer Science/Statistics (One of the following)
Cmp Sc 053 or 074/078 ........................................... 3
Stat 115-Stat for Soc Sci ....................................... 3
Stat 211-Stat Tools for Decision Making .................... 3

General Requirements for BA
English Composition (English 20 and one additional composition course) ...................................... 6
Western Civilizations (History 111 and 112) ................. 6
Foreign Language (three semesters of a foreign language) ........................................... 12
Humanities ....................................................... 12
Social Sciences .................................................. 12

Elective credits: In consultation with his or her advisor, each student will elect sufficient additional courses to complete a minimum of 120 credit hours.
Effective Year: 2010
Effective Term: Spring

Degree Change Form (DC)

This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:
Bachelor of Arts, Secondary Education Emphasis Area, Biological Sciences

Department: Biological Sciences

Briefly describe action requested (Attach documentation as appropriate):
We are updating our curriculum to reflect the change in credit hours for organic chemistry classes that are required for our students. These classes (Chem 221 and Chem 223) recently changed from 3 to 4 credit hours each. Please note the minor changes (in red) on the following page.

Recommended by Department: ____________________________
(Chair signature) Date: 10/31/09

Recommended by: ____________________________
Discipline Specific Curricula Committee (Chair signature) Date: 11/3/2009

Approved by Curricula Committee: ____________________________
(Chair signature) Date: 

Approved by Faculty Senate: ____________________________
(Chair signature) Date: 

10/08/09 (Revised 1/31/2009)
Bachelor of Arts
Biological Sciences
Secondary Education Emphasis Area
Degree Requirements

A degree in this emphasis area requires 137 credit hours. The required courses are provided below. A minimum grade of "C" is required by the department in all mathematics and statistics courses counted toward this degree.

**Humanities: 21 semester hours**
English 20 (3 hours), English 60 or 160 (3 hours),
Speech 85 (3 hours), at least one course in each of:
Literature and Philosophy and 2 courses in Fine arts

**Social Sciences: 15 semester hours**
History 111 (3 hours), History 112 (3 hours), History 175 or 176 (3 hours), Political Science 90 (3 hours),
Psychology 50 (3 hours)

**Mathematics/Physical Science: 9 semester hours**
At least one course in Math and Physics or Geology,
proven proficiency at college algebra

**Computer Science/Statistics: 3 semester hours**
3 semester hours of Computer Science or Statistics

**Chemistry: 17 semester hours**
Chemistry 1, 2, 3, and 4 (9 hours), Chemistry 221, 223 (8 hours)

**Biological Sciences: 30 semester hours**
28 semester hours of required core coursework, Bio Sc 102 (1 hour), Bio Sc 111/112 (5 hours), Bio Sc 113/114 (4 hours), Bio Sc 211/212 (4 hours), Bio Sc 218 (3 hours), Bio Sc 231 (3 hours), Bio Sc 251 (3 hours),
History 275 (3 hours), Bio Sc 310 (1 hour), 3 semester hours of advanced biology elective coursework

**Education: 42 semester hours**
Educ 40 (2 hours), Educ 104 (2 hours), Educ 164 (2 hours), Educ 174 (2 hours), Educ 216 (2 hours), Educ 251 (3 hours), Educ 280 (6 hours), Educ 298 (1 hour),
Educ 299 (12 hours), Psychology 155 (3 hours),
Psychology 200 (3 hours), Psychology 354 (3 hours)
Bachelor of Arts
Biological Sciences
Secondary Education Emphasis Area
Degree Requirements

A degree in this emphasis area requires 135 credit hours. The required courses are provided below. A minimum grade of "C" is required by the department in all mathematics and statistics courses counted toward this degree.

Humanities: 21 semester hours
English 20 (3 hours), English 60 or 160 (3 hours),
Speech 85 (3 hours), at least one course in each of:
Literature and Philosophy and 2 courses in Fine arts

Social Sciences: 15 semester hours
History 111 (3 hours), History 112 (3 hours), History
175 or 176 (3 hours), Political Science 90 (3 hours),
Psychology 50 (3 hours)

Mathematics/Physical Science: 9 semester hours
At least one course in Math and Physics or Geology,
proven proficiency at college algebra

Computer Science/Statistics: 3 semester hours
3 semester hours of Computer Science or Statistics

Chemistry: 16 semester hours
Chemistry 1, 2, 3, and 4 (9 hours), Chemistry 221, 223
(6 hours)

Biological Sciences: 30 semester hours
28 semester hours of required core coursework, Bio Sc
102 (1 hour), Bio Sc 111/112 (5 hours), Bio Sci 113/114
(4 hours), Bio Sc 211/212 (4 hours), Bio Sc 218 (3
hours), Bio Sc 231 (3 hours), Bio Sc 251 (3 hours),
History 275 (3 hours), Bio Sc 310 (1 hour), 3 semester
hours of advanced biology elective coursework

Education: 42 semester hours
Educ 40 (2 hours), Educ 104 (2 hours), Educ 164 (2
hours), Educ 174 (2 hours), Educ 216 (3 hours), Educ
251 (3 hours), Educ 280 (6 hours), Educ 298 (1 hour),
Educ 299 (12 hours), Psychology 155 (3 hours),
Psychology 208 (3 hours), Psychology 354 (3 hours)
Degree Change Form (DC)

This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:
Bachelor of Science, Biological Sciences

Department: Biological Sciences

Briefly describe action requested (Attach documentation as appropriate):
We are updating our curriculum to reflect the change in credit hours for organic chemistry classes that are required for our students. These classes (Chem 221 and Chem 223) recently changed from 3 to 4 credit hours each. Please note the minor changes (in red) on the following page.

We are also amending the number of advanced biology credit hours that are required from 22 to 20. This corrects an error and inconsistency between the catalog and CAPS reports.

Recommended by Department: [Signature]
Date: 10/11/09

Recommended by: [Signature]
Discipline Specific Curricula Committee
Date: 11/3/2009

Approved by Curricula Committee: [Signature]
Date: 

Approved by Faculty Senate: [Signature]
Date: 

10/08/09

(Revised 1/31/2008)
Bachelor of Science
Biological Sciences
Degree Requirements

A minimum of 130 credit hours is required for a Bachelor of Science degree in Biological Science and an average of at least two grade points per credit hour must be obtained. These requirements for the B.S. degree are in addition to credit received for basic ROTC. The Biological Science B.S. degree must include 46 semester hours of biological sciences course work, to include:

Bio Sc 102-Intro to Bio Sc .................. 1
Bio 110-Gen Bio or Bio Sc 111-Princ Bio ...... 3
Bio Sc 112-Gen Bio Lab .................... 2
Bio Sc 113-Biodiversity .................... 3
Bio Sc 114-Biodiversity Lab ............... 1
Bio Sc 211-Cellular Biology ................ 3
Bio Sc 212-Cellular Biology Lab ........... 1
Bio Sc 221-Microbiology ................... 3
Bio Sc 222-Microbiology Lab ............. 2
Bio Sc 231-General Genetics ............... 3
Bio Sc 251-Ecology ......................... 3
Bio Sc 310-Seminar ......................... 1

Advanced biological sciences or approved course work in other departments for a total of 46 credit hours of biology-related classes .................. 20

22 semester hours of chemistry to include:
Chem 1,2,3, & 4 (General chemistry) ........ 9
Chem 221, 226, 223, 228 (Org Chem and labs) 10
Chem 351 (Biochemistry) ................... 3

2 semesters of College (General) Physics and labs
Phys 31 (21), 22, 35 (25), 26 ............... 8 (10)

The Math/Statistics requirement will be a minimum of 10 credit hours with a requirement for Math 8 or Math 14.

12 semester hours of humanities, excluding foreign language, and to include: English 20 (entering students will normally take English 20 either semester of the first year) and English 60 .................. 12

9 semester hours of social sciences, (to include Hist 112 or 175 or 176 or Pol Sc 90, or equivalent ........... 9

Elective credits: In consultation with his or her advisor, each student will elect sufficient additional courses to complete a minimum of 130 credit hours. A minimum grade of "C" is required for each Biological Science course used to fulfill the B.S. degree requirements.
Bachelor of Science
Biological Sciences
Degree Requirements

A minimum of 130 credit hours is required for a Bachelor of Science degree in Biological Science and an average of at least two grade points per credit hour must be obtained. These requirements for the B.S. degree are in addition to credit received for basic ROTC. The Biological Science B.S. degree must include 46 semester hours of biological sciences course work, to include:

- Bio Sc 102-Intro to Bio Sc .................................1
- Bio 110-Gen Bio or Bio Sc 111-Princ Bio ..............3
- Bio Sc 112-Gen Bio Lab ......................................2
- Bio Sc 113-Biodiversity .....................................3
- Bio Sc 114-Biodiversity Lab ...............................1
- Bio Sc 211-Cellular Biology ...............................3
- Bio Sc 212-Cellular Biology Lab ..........................1
- Bio Sc 221-Microbiology ...................................3
- Bio Sc 222-Microbiology Lab ..............................2
- Bio Sc 231-General Genetics ..............................3
- Bio Sc 251-Ecology ..........................................3
- Bio Sc 310-Seminar ..........................................1

Advanced biological sciences or approved course work in other departments for a total of 46 credit hours of biology-related classes ........................................ 20

- 20 semester hours of chemistry to include general chemistry (Chem 1, 2, 3, & 4) .................................9
- Chem 221, 226, 223, 228-Org Chem ........................8
- Chem 361 General Biochemistry ............................3

- 2 semesters of College (General) Physics and labs
  Phys 31 (21), 22, 35 (25), 268 ............................10

The Math/Statistics requirement will be a minimum of 10 credit hours with a requirement for Math 8 or Math 14.

- 12 semester hours of humanities, excluding foreign language, and to include: English 20 (entering students will normally take English 20 either semester of the first year) and English 60 ............................12

- 9 semester hours of social sciences, (to include Hist 112 or 175 or 176 or Pol Sc 90, or equivalent ........................9

Elective credits: In consultation with his or her advisor, each student will elect sufficient additional courses to complete a minimum of 130 credit hours. A minimum grade of "C" is required for each Biological Science course used to fulfill the B.S. degree requirements.
Course Change Form (CC)
This form is for creating or modifying permanent courses.

Course Changes
(Check all changes.)
New Course ☐ Course Deletion ☐ Credit Hours ☐ Prerequisites ☐
Course Title ☐ Catalog Description ☒ Course Number ☐ Co-listing ☐

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Electrical & Computer Engineering
2. Discipline and Course Number: Present: EE 405
   Proposed:
3. Course Title: Present: Power System Protection
   Proposed: same
   Abbreviated Course Title: Power System Protection
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present: Protective relaying incorporating electromechanical, solid state & modern computer relaying methods for high voltage transmission systems. Pilot wire, power line carrier apparatus, bus protection, circuit breaker interruption characteristics, out of step relaying, reclosing, synchronizing, load & frequency relaying
   Proposed: Protective relaying incorporating electromechanical, solid state and computer relaying methods for high voltage transmission systems; instrument transformers; generator, transformer, line and bus protection; effect of system grounding; pilot protection and out of step relaying principles.

5. If course requires field trip check box: ☐
6. Credit Hours:
   Present: Lecture: 3 Lab: 0 Total: 3
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present: EE 303 & EE 307
   Proposed:
8. Required for Majors: ☐ Elective for Majors: ☒
9. Justification: The new description correctly reflects the contents of this course.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.
   1) 2) 3)
   4) 5) 6)
   Recommended by Department [Signature] Date: 2/25/09
   Recommended by Discipline Specific Curricula Committee [Signature] Date: 1/19/09
   Approved by Curricula Committee: [Signature] Date: 
   Approved by Faculty Senate: [Signature] Date: 3/31/09

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Elec Eng 405  Power System Protection

Old Catalog Description:
Protective relaying incorporating electromechanical, solid state and modern computer relaying methods for high voltage transmission systems. Pilot wire, power line carrier apparatus, bus protection, circuit breaker interruption characteristics, out of step relaying, reclosing, synchronizing, load and frequency relaying.

New Catalog Description:
Protective relaying incorporating electromechanical, solid state and computer relaying methods for high voltage transmission systems; instrument transformers; generator, transformer, line and bus protection; effect of system grounding; pilot protection and out of step relaying principles.

Prerequisite: No change

Reason for change: The new description correctly reflects the contents of the course.
Effective: Fall 2011
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
New Course □  Course Deletion □  Credit Hours □  Prerequisites □
Course Title □  Catalog Description □  Course Number □  Co-listing □

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Electrical & Computer Engineering
2. Discipline and Course Number: Present: EE 404  Proposed:
3. Course Title: Present: Economic Operation of Power Systems
   Proposed: Power System Operations
   Abbreviated Course Title: Power System Operations
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present: Optimum economic loading of thermal plants determined by the method of Lagrange multipliers, derivation of the system loss matrix & its transformation to the most useful basis, practical evaluation of the matrix elements, extension of optimum loading criteria to include system losses, effect of hydro plants on system economics.
   Proposed: Optimal dispatch operations, economic loading of power plants, mathematical optimization, locational marginal pricing, optimal power flow; effect of hydro and wind power plants on system economics; contingency analysis and system security, state estimation.

5. If course requires field trip check box: □
6. Credit Hours:
   Present: □ Lecture: 3  Lab: 0  Total: 3
   Proposed: □ Lecture:  □ Lab:  □ Total: 
7. Prerequisites:
   Present: EE 307
   Proposed:
8. Required for Majors: □  Elective for Majors: □
9. Justification: The new title correctly reflects the contents of the course.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1) □  2) □  3) □
   4) □  5) □  6) □

Recommended by Department

[Signature]
Date: 25-5-09

Recommended by Discipline Specific Curricula Committee

[Signature]
Date: 10-19-09

Approved by Curricula Committee:

[Signature]
Date: ______

Approved by Faculty Senate:

[Signature]
Date: ______

09/25/09

This fax was received by GFI FAXmaker fax server. For more information, visit: http://www.gfi.com
Elec Eng 404

Old Title: Economic Operation of Power Systems
New Title: Power System Operations

Old Catalog Description:
Optimum economic loading of thermal plants determined by the method of Lagrange multipliers, derivation of the system loss matrix and its transformation to the most useful basis, practical evaluation of the matrix elements, extension of optimum loading criteria to include system losses, effect of hydro plants on system economics.

New Catalog Description:
Optimal dispatch operations, economic loading of power plants, mathematical optimization, locational marginal pricing, optimal power flow; effect of hydro and wind power plants on system economics; contingency analysis and system security, state estimation.

Prerequisite: No change

Reason for change: The new title correctly reflects the contents of the course.
Effective: Fall 2010
Effective Year: 2010
Term: Summer □ Fall □ Spring □

Course Change Form (CC)
This form is for creating or modifying permanent courses.

Course Changes
(.Check all changes.)
New Course □ Course Deletion □ Credit Hours □ Prerequisites □
Course Title □ Catalog Description □ Course Number □ Co-listing □

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Geol Sci and Engineering
2. Discipline and Course Number: Present: Pet Eng 406 Proposed: Pet Eng 408
3. Course Title: Present: Advanced Reservoir Simulation
   Proposed:
   Abbreviated Course Title: Adv Reservoir Sim
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (300 Character Spaces or Less.)
   Present: Advanced techniques in reservoir simulation.
   Proposed:

5. If course requires field trip check box: □
6. Credit Hours: Present: Lecture: 3 Lab: Total: 3
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present: Petr 308
   Proposed:

8. Required for Majors: □ Elective for Majors: □
9. Justification: Achieve consistency with numbers. Petr 308 is the first reservoir simulation course,
   we want to use Petr 408 as the second course.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): N/A
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1) 2) 3)
   4) 5) 6)

Recommended by Department
[Signature]
Date: 5/25/05

Recommended by Discipline Specific Curricula Committee
[Signature]
Date: 10-19-09

Approved by Curricula Committee: [Signature]
Date: __________

Approved by Faculty Senate: [Signature]
Date: __________

(R E V I S E D 1/29/09)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

**Course Changes** (Check all changes.)
- New Course □
- Course Deletion □
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing □

**Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Geological Science and Engineering
2. Discipline and Course Number: Present: Geo Eng 235  Proposed:
3. Course Title: Present: Environmental Geoscience  Proposed:
   - Abbreviated Course Title:
     (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present: Proposed:

5. If course requires field trip check box: □
6. Credit Hours:
   Present: Lecture: Lab: Total:
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present:
   Proposed:
8. Required for Majors: □  Elective for Majors: □
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
1)  
2)  
3)  
4)  
5)  
6)  
Recommended by Department
   (Chair signature)
   Date: 9/25/09
Recommended by Discipline Specific Curricula Committee
   (Chair signature)
   Date: 10/19/09
Approved by Curricula Committee:
   (Chair signature)
   Date:

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Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
- New Course □
- Course Deletion ☒
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing □

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Geotechnical Science and Engineering
2. Discipline and Course Number: Present: GeoEng 340
   Proposed:
3. Course Title: Present: Fld Opr/Ground Water Hyd
   Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   Proposed:
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:

5. If course requires field trip check box: ☐
6. Credit Hours:
   Present: Lecture:
   Lab:
   Total:
   Proposed: Lecture:
   Lab:
   Total:
7. Prerequisites:
   Present:
   Proposed:
8. Required for Majors: ☐
   Elective for Majors: ☐
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.
10. Semesters previously offered as an experimental course (101, 201, 301, 401):
    1) 2) 3) 4) 5) 6)
    Recommended by Department: □
    (Chair signature)
    Recommended by Discipline Specific Curricula Committee:
    (Chair signature)
    Approved by Curricula Committee:
    (Chair signature)
    Approved by Faculty Senate:
    (Chair signature)

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Course Change Form (CC)

This form is for creating or modifying permanent courses.

**Course Changes** (Check all changes.)
- New Course [ ]
- Course Deletion [x]
- Credit Hours [ ]
- Prerequisites [ ]
- Course Title [ ]
- Catalog Description [ ]
- Course Number [ ]
- Co-listing [ ]

**Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Geological Science and Engineering
2. Discipline and Course Number: Present: Geo Eng 349  Proposed: 
3. Course Title: Present: Comp Appl in Geol Engr  Proposed: 
   Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   Proposed:
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:

5. If course requires field trip check box: [ ]
6. Credit Hours:
   Present: [ ]
   Proposed: [ ]
   Lecture: [ ]
   Lab: [ ]
   Total: [ ]
7. Prerequisites:
   Present: [ ]
   Proposed: [ ]
8. Required for Majors: [ ]
   Elective for Majors: [ ]
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
   1) 
   2) 
   3) 
   4) 
   5) 
   Recommended by Department: [Signature] Date: 10-19-09
   Recommended by Discipline Specific Curricula Committee: [Signature] Date: 10-19-09
   Approved by Curricula Committee: [Signature] Date: 
   Approved by Faculty Senate: [Signature] Date: 

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Course Change Form (CC)

Course Changes
(Select all changes.)
- New Course
- Course Deletion
- Credit Hours
- Prerequisites

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Geological Science and Engineering
2. Discipline and Course Number: Present: Geo Eng 351 Proposed:
3. Course Title: Present: Geological Eng Case Hist Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:

5. If course requires field trip check box: [ ]
6. Credit Hours:
   Present: Lecture: Lab: Total:
   Proposed: Lecture: Lab: Total:

7. Prerequisites:
   Present:
   Proposed:

8. Required for Majors: [ ] Elective for Majors: [ ]

9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.
   1) 2) 3)
   4) 5) 6)

Recommended by Department [Signature]
(Chair signature)
Date: 9/15/09

Recommended by Discipline Specific Curricula Committee [Signature]
(Chair signature)
Date: 10/19/09

Approved by Curricula Committee: [Signature]
(Chair signature)
Date: 

Approved by Faculty Senate: [Signature]
(Chair signature)
Date: 

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Course Change Form (CC)

This form is for creating or modifying permanent courses.

**Course Changes** (Check all changes.)
- New Course
- Course Deletion
- Credit Hours
- Prerequisites

**Course Title**
- Catalog Description
- Course Number
- Core-listing

**Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. **Department**: Geological Science and Engineering
2. **Discipline and Course Number**: Present: Geo Eng 415  Proposed:
3. **Course Title**: Present: Advanced Geo-statistics  Proposed:
   - Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   - Present:
   - Proposed:
4. **Catalog Description**: (40 Words or Less)
   - Present:
   - Proposed:
5. If course requires field trip check box
6. **Credit Hours**: Present:  Proposed: Lecture:  Lab:  Total:
7. **Prerequisites**
   - Present:
   - Proposed:
8. **Required for Majors**:  **Elective for Majors**:  
9. **Justification**: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.
10. **Semesters previously offered as an experimental course (101, 201, 301, 401)**:
11. **List all co-listed courses, Initiates by Dept. Chair; if signature does not appear below.**  
   1)  
   2)  
   3)  
   4)  
   5)  
   6)  
   Recommended by Department:  
   (Chair signature)
   Recommended by Discipline Specific Curricula Committee:  
   (Chair signature)
   Approved by Curricula Committee:  
   (Chair signature)
   Approved by Faculty Senate:  
   (Chair signature)

Date: 9/25/09  Date: 10/19/09

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Course Change Form (CC)
This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
- New Course □
- Course Deletion □
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing □

Course Information (1-9 Must Be Completed. Leave “Proposed” items blank if no change is being made.)
1. Department: Geological Science and Engineering
2. Discipline and Course Number: Present: Geo Eng 438
   Proposed: Rem Eng Uncont Haz Waste
   Proposed: 
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
3. Catalog Description (40 Words or Less)
   Present:
   Proposed:
4. Required for Majors: □
   Elective for Majors: □
5. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

6. If course requires field trip check box: □

7. Credit Hours:
   Present:
   Proposed:
   Lecture: 
   Lab: 
   Total: 

8. Prerequisites:
   Present:
   Proposed:

9. Semesters previously offered as an experimental course (101, 201, 301, 401):

10. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
    1) 
    2) 
    3) 
    4) 
    5) 
    6) 

   Recommended by Department: □
   (Chair signature)

   Recommended by Discipline Specific Curricula Comittees: □
   (Chair signature)

   Approved by Curricula Committee: □
   (Chair signature)

   Approved by Faculty Senate: □
   (Chair signature)

   Date: 09/25/09
   Date: 10/19/09

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Course Change Form (CC)

This form is for creating or modifying permanent courses.

**Course Changes** (Check all changes.)
- New Course ☐
- Course Deletion ☒
- Credit Hours ☐
- Prerequisites ☐

**Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. **Department:** Interdisciplinary Engineering
2. **Discipline and Course Number:** Present: Eng Gr 212 Proposed:
3. **Course Title:** Present: Computer Aided Drafting Proposed:
   - **Abbreviated Course Title:**
     - (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   - **Catalog Description** (40 Words or Less)
     - Present:
8. **Required for Majors:** ☐
   - Elective for Majors: ☐
9. **Justification:** This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

5. If course requires field trip check box: ☐
6. **Credit Hours:**
   - Present: Lecture: Lab: Total:
   - Proposed: Lecture: Lab: Total:
7. **Prerequisites:**
   - Present:
   - Proposed:
8. **Semesters previously offered as an experimental course (101, 201, 301, 401):**
11. **List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.**
   - 1) 2) 3)
   - 4) 5) 6)

**Recommended by Department**

(Chair signature)

Date: 9/24/09

**Recommended by Discipline Specific Curricula Committee**

(Chair signature)

Date: 10/13/09

**Approved by Curricula Committee:**

(Chair signature)

Date: 

**Approved by Faculty Senate:**

(Chair signature)

Date: 

(Revised 1/31/09)

04/21/09

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Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
New Course ☐ Course Deletion ☐ Credit Hours ☐ Prerequisites ☐
Course Title ☐ Catalog Description ☐ Course Number ☐ Co-listing ☐

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Departments Eng Mgmt and Systems Eng
2. Discipline and Course Number: Present: ENG MGT 357 Proposed:
3. Course Title: Present: Advanced Facilities Planning & Design Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (300 Character Spaces or Less.)
   Present: Development of an integrated approach to the planning and design of facilities; examination of advanced techniques and tools for facility location, space allocation, facility layout, materials handling system design, work place design; e.g. mathematical programming, simulation modeling, CAD system
   Proposed: An integrated approach to the planning and design of facilities; examination of advanced techniques and tools for facility location, space allocation, facility layout materials handling system design, work place design; e.g. mathematical programming and simulation modeling.

5. If course requires field trip check box ☐
6. Credit Hours:
   Present: Lecture: 1.0 Lab: 2.0 Total: 3.0
   Proposed: Lecture: 2.0 Lab: 1.0 Total: 3.0
7. Prerequisites:
   Present: ENG MGT 257 or instructor's permission
   Proposed:
8. Required for Majors ☐ Elective for Majors ☐
9. Justification: Update catalog description to 300 characters or less. Change lab from 2 hours to 1 hour to reflect actual practice.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

   1) 2) 3)
   4) 5) 6)

   Recommended by Department
   [Signature]
   (Chair signature)
   Date: 11/30/09

   Recommended by Discipline Specific Curricula Committee
   [Signature]
   (Chair signature)
   Date: 10/19/09

   Approved by Curricula Committee:
   [Signature]
   (Chair signature)
   Date:

   Approved by Faculty Senate:
   [Signature]
   (Chair signature)
   Date:

   (Revised 1/25/06)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes
(Check all changes.)
New Course ☐ Course Deletion ☐ Credit Hours ☐ Prerequisites ☒
Course Title ☐ Catalog Description ☐ Course Number ☐ Co-listing ☐

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business & Info Tech
2. Discipline and Course Number: Present: IST 368 Proposed:
3. Course Title: Present: Law and Ethics in E-Commerce Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (300 Character Spaces or Less.)
   Present: Provides the ethical framework to analyze the ethical, legal, and social issues that arise for citizens and computer professionals regarding the computerization of society. Topics include: free speech, privacy, intellectual property, product liability, and professional responsibility.
   Proposed:

5. If course requires field trip check box: ☐
6. Credit Hours:
   Present: Lecture: 3.0 Lab: Total:
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present: Any intro level Philosophy course
   Proposed: none
8. Required for Majors: ☐ Elective for Majors: ☒
9. Justification: Prerequisite change based on current content of the course and instructor feedback.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1) Phil
   2)
   3)
   4) 5) 6)
   Recommended by Department
   (Chair signature)
   Recommended by Discipline Specific Curricula Committee
   (Chair signature)
   Approved by Curricula Committee:
   (Chair signature)
   Approved by Faculty Senate:
   (Chair signature)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes
(Check all changes.)
New Course ☐  Course Deletion ☐  Credit Hours ☐  Prerequisites ☒
Course Title ☒  Catalog Description ☒  Course Number ☐  Co-listing ☐

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Business & Info Tech
2. Discipline and Course Number: Present: BUS 110  Proposed:
3. Course Title: Present: Management and Organizational Behavior
   Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (300 Character Spaces or Less.)
   Present: The course provides coverage of classic and current management principles, as well as the
   study of the behavior of individuals and groups in an organizational setting. Topics include
   motivation, leadership, organizational design, and conflict resolution.
   Proposed: The course provides an introduction to the basic concepts of management and organization to
   give all majors an awareness of what functions and challenges are faced by managers in
today's global environment; their applications to the organization, operations, and resources
are discussed.
5. If course requires field trip check box: ☐
6. Credit Hours:
   Present: Lecture: 3.0  Lab:  Total:
   Proposed: Lecture:  Lab:  Total:
7. Prerequisites:
   Present: Psych 50
   Proposed: none
8. Required for Majors: ☒ Elective for Majors: ☐
9. Justification: Updated description and prerequisite change based on current content of the course
    and instructor feedback.
10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1)  2)  3)  4)  5)  6)
   Recommended by Department ____________________________
   (Chair signature) ____________________________
   Recommended by Discipline Specific Curricula Committee ____________________________
   (Chair signature) ____________________________
   Approved by Curricula Committee: ____________________________
   (Chair signature) ____________________________
   Approved by Faculty Senate: ____________________________
   (Chair signature) ____________________________

Date: 12/16/09
Date: 11/4/09
Date:
Date:

(Revised 1/29/09)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
- New Course
- Course Deletion
- Credit Hours
- Prerequisites
- Course Title
- Catalog Description
- Course Number
- Co-listing

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business & Info Tech
2. Discipline and Course Number: Present: BUS 120 Proposed:
3. Course Title: Present: Financial Accounting Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (300 Character Spaces or Less.)
   Present: This course is an introduction to financial accounting and its significant role in making sound business decisions. Emphasis is on what accounting information is, why it is important, and how it is used to make strategic economic decisions.
   Proposed:

5. If course requires field trip check box: □
6. Credit Hours:
   Present: Lecture: 3.0 Lab: Total:
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present: Math 4
   Proposed: none
8. Required for Majors: ☑ Elective for Majors: □
9. Justification: Prerequisite change based on current content of the course and instructor feedback.
10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1) 2) 3) 4) 5) 6)

Recommended by Department
(Chair signature) Date: 10/16/09

Recommended by Discipline Specific Curricula Committee
(Chair signature) Date: 11/4/09

Approved by Curricula Committee:
(Chair signature) Date:

Approved by Faculty Senate:
(Chair signature) Date:
Course Change Form (CC)
This form is for creating or modifying permanent courses.

Course Changes
(Check all changes.)
New Course □ Course Deletion □ Credit Hours □ Prerequisites □
Course Title □ Catalog Description □ Course Number □ Co-listing □

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business & Info Tech
2. Discipline and Course Number: Present: BUS 320
   Proposed: 
3. Course Title: Present: Managerial Accounting
   Proposed: 
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description
   (300 Character Spaces or Less.)
   Present: "Emphasizes internal use of accounting information in establishing plans and objectives, controlling operations, and making decisions involved with management of an enterprise (the determination of costs relevant to a specific purpose such as inventory valuation, control of current operation, or speci"
   Proposed: 

5. If course requires field trip check box: □
6. Credit Hours:
   Present: 
   Lecture: 3.0   Lab: 
   Total: 
   Proposed: 
   Lecture: 
   Lab: 
   Total: 

7. Prerequisites:
   Present: BUS 120
   Proposed: BUS 120 or Eng Mgt 130 or Eng Mgt 131 or Eng Mgt 230

8. Required for Majors: □ Elective for Majors: □
9. Justification: Prerequisite change based on current content of the course and instructor feedback.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1)  2)  3) 
   4)  5)  6) 

   Recommended by Department
   Recommended by Discipline Specific Curricula Committee
   Approved by Curricula Committee:
   Approved by Faculty Senate:

   Date: 10/6/09
   Date: 11/4/09
   Date: 
   Date: 

(Revised 1/29/09)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
- New Course [ ]
- Course Deletion [ ]
- Credit Hours [ ]
- Prerequisites [ ]
- Course Title [ ]
- Catalog Description [ ]
- Course Number [ ]
- Co-listing [ ]

Course Information
1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.

1. Department: Business & Info Tech
2. Discipline and Course Number: Present: BUS 360
   Proposed:
3. Course Title: Present: Business Operations
   Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (300 Character Spaces or Less.)
   Present: This course examines the concepts, processes, and institutions that are fundamental to an understanding of business operations within organizations. Emphasis is on the management and organization of manufacturing and service operations and the application of quantitative methods to the solution of
   Proposed:
5. If course requires field trip check box: [ ]
6. Credit Hours:
   Present: Lecture: 3.0
   Lab: Total:
   Proposed:
   Lecture:
   Lab:
   Total:
7. Prerequisites:
   Present: Math 12, Stat 211, and Bus 120
   Proposed: Math 8 or 12 or 14, any Statistics course, Bus 120 or Eng Mgt 130 or Eng Mgt 131 or Eng Mgt 230
8. Required for Majors: [ ]
   Elective for Majors: [ ]
9. Justification: Prerequisite change based on current content of the course and instructor feedback.
10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1) 2) 3)
   4) 5) 6)

   Recommended by Department
   (Chair signature)

   Recommended by Discipline Specific Curricula Committee
   (Chair signature)

   Approved by Curricula Committee:
   (Chair signature)

   Approved by Faculty Senate:
   (Chair signature)

   Date: 10/14/09
   Date: 11/4/09
   Date:
   Date:

(Revised 1/29/09)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes
(Check all changes.)
- New Course □
- Course Deletion □
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing □

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business & Info Tech
2. Discipline and Course Number: Present: BUS 380
   Proposed:
3. Course Title: Present: Strategic Management
   Proposed:

   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)
   Present:
   Study of the formulations and implementation of corporative, business, and functional
   strategies designed to achieve organizational objectives. Case studies and research reports
   may be used extensively.
   Proposed:

5. If course requires field trip check box: □
6. Credit Hours:
   Present: Lecture: 3.0 Lab: Total:
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present: MKT 311 and FIN 250; Senior Standing
   Proposed: (MKT 311 or Eng Mgt 251) and (FIN 250 or Eng Mgt 252) and Senior standing
8. Required for Majors: □
   Elective for Majors: □
9. Justification: Prerequisite change based on current content of the course and instructor feedback.
10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1)  
   2)  
   3)  
   4)  
   5)  
   6)  

   Recommended by Department: [Signature]
   Date: 10/16/09

   Recommended by Discipline Specific Curricula Committee: [Signature]
   Date: 11/4/09

   Approved by Curricula Committee: [Signature]
   Date: ______

   Approved by Faculty Senate: [Signature]
   Date: ______

(Revised 1/29/09)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes
(Check all changes.)

New Course ☐ Course Deletion ☐ Credit Hours ☐ Prerequisites ☒
Course Title ☐ Catalog Description ☐ Course Number ☐ Co-listing ☐

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business & Info Tech

2. Discipline and Course Number: Present: ERP 246 Proposed:

3. Course Title: Present: Introduction to Enterprise Resource Planning Proposed:

Abbreviated Course Title:
(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present: Fundamentals of enterprise resource planning (ERP) systems concepts, and the importance of integrated information systems in an organization. The focus of this course is on illustrating procurement, production, and sales business processes using ERP software. Use of SAP as an example ERP system.

Proposed:

5. If course requires field trip check box: ☐

6. Credit Hours:
Present: Lab: Total:
Lecture: 3.0 Lab: Total:

7. Prerequisites:
Present: IST 51
Proposed: IST 50

8. Required for Majors: ☒ Elective for Majors: ☐

9. Justification: Prerequisite change based on current content of the course and instructor feedback.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1)  2)  3)

4)  5)  6)

Recommended by Department ________________ Date: 10/6/09
(Chair signature)

Recommended by Discipline Specific Curricula Committee ________________ Date: 11/4/09
(Chair signature)

Approved by Curriculam Committee: ________________ Date: __________
(Chair signature)

Approved by Faculty Senate: ________________ Date: __________
(Chair signature)

(Revised 1/29/09)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes
(Check all changes.)
- New Course □
- Course Deletion □
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing □

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business & Info Tech

2. Discipline and Course Number:
   - Present: FIN 250
   - Proposed:

3. Course Title:
   - Present: Corporate Finance I
   - Proposed:

   Abbreviated Course Title:
   - (24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description
   - Present: This course studies the need for funds in business and the techniques of analysis used to determine how effectively these funds are invested within the firm. Topics include institutions, instruments, and markets concerned with raising funds.
   - Proposed:

5. If course requires field trip check box: □

6. Credit Hours:
   - Present: Lecture: 3.0
   - Lab: Total:
   - Proposed: Lecture: Lab: Total:

7. Prerequisites:
   - Present: BUS 120, and Econ 121 or Econ 122
   - Proposed: (BUS 120 or Eng Mgt 130 or Eng Mgt 131 or Eng Mgt 230) and (Econ 121 or Econ 122)

8. Required for Majors: □
   Elective for Majors: □

9. Justification: Prerequisite change based on current content of the course and instructor feedback.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

   1)  2)  3)
   4)  5)  6)

   Recommended by Department
   (Chair signature)

   Recommended by Discipline Specific Curricula Committee
   (Chair signature)

   Approved by Curricula Committee:
   (Chair signature)

   Approved by Faculty Senate:
   (Chair signature)

Date: 11/4/09
Date: 11/5/09
Date:
Date:

(Revised 1/29/09)
Course Change Form (CC)
This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
New Course ☐ Course Deletion ☐ Credit Hours ☐ Prerequisites ☒
Course Title ☐ Catalog Description ☐ Course Number ☐ Co-listing ☐

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business & Info Tech

2. Discipline and Course Number: Present : IST 223 Proposed:

3. Course Title: Present: Database Management
Proposed:

Abbreviated Course Title:
(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)
Present: The course introduces the concepts of database management systems. Issues in database architecture, design, administration, and implementation are covered.

Proposed:

5. If course requires field trip check box: ☐

6. Credit Hours: Present: Lecture: 3.0 Lab: Total: Proposed: Lecture: Lab: Total:

7. Prerequisites:
Present: IST 141
Proposed: IST 50 and (IST 151 or Comp Sci 153)

8. Required for Majors: ☒ Elective for Majors: ☐

9. Justification: IST 141 no longer exists. Prerequisite change based on current content of the course and instructor feedback.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
1) 2) 3)
4) 5) 6)

Recommended by Department ____________ (Chair signature) ____________ Date: 10/16/09
Recommended by Discipline Specific Curricula Committee ____________ (Chair signature) ____________ Date: 11/4/09
Approved by Curricula Committee: ____________ (Chair signature)
Approved by Faculty Senate: ____________ (Chair signature)
Course Change Form (CC)
This form is for creating or modifying permanent courses.

**Course Changes** (Check all changes.)
- New Course □
- Course Deletion □
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing □

**Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. **Department:** Business & Info Tech
2. **Discipline and Course Number:**
   - Present: IST 241
   - Proposed:
3. **Course Title:**
   - Present: E-Commerce
   - Proposed:
4. **Abbreviated Course Title:**
   - (24 Spaces or Less. Only needed for New Courses or Title Changes.)
5. **Catalog Description** (300 Character Spaces or Less.)
   - Present: Introduction to fundamental concepts of management and application to Information Technologies. This course examines the use of IT in business processes and the management issues of integrating IT into organization processes to gain a competitive advantage. Topics include: management; organizatio
   - Proposed:

6. **If course requires field trip check box:** □
7. **Credit Hours:**
   - Present: Lecture: 3.0 Lab: Total:
   - Proposed: Lecture: Lab: Total:
8. **Prerequisites:**
   - Present: IST 141, IST 286
   - Proposed: IST 50 and IST 286
9. **Required for Majors:** □
    **Elective for Majors:** □
10. **Justification:** IST 141 no longer exists. Prerequisite change based on current content of the course and instructor feedback.

11. **Semesters previously offered as an experimental course (101, 201, 301, 401):**
12. **List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.**
   1) 2) 3)
   4) 5) 6)

**Recommended by Department**

**Recommended by Discipline Specific Curricula Committee**

**Approved by Curricula Committee:**

**Approved by Faculty Senate:**

Date: 11/5/09

(Revised 1/29/09)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
- New Course □
- Course Deletion □
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing □

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business & Info Tech

2. Discipline and Course Number: Present: IST 354

3. Course Title: Present: Multi-Media Development and Design

   Proposed:

   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)

   Present:
   Proposed:

4. Catalog Description (300 Character Spaces or Less.)

   Present: Students will learn current practices for development and design of interactive multimedia. The course covers tools for development of 2-D and 3-D graphics, video, audio, animation, and integrated multimedia environments.

   Proposed:

5. If course requires field trip check box: □

6. Credit Hours:
   Present: Lecture: 3.0
   Lab: 
   Total:

   Proposed: Lecture: 
   Lab: 
   Total:

7. Prerequisites:
   Present: IST 51, Cmp Sc 53 or Cmp Sc 73

   Proposed: IST 51 or Comp Sci 53 or Comp Sci 73 or Comp Sci 74

8. Required for Majors: □

9. Elective for Majors: □

10. Justification: Prerequisite change based on current content of the course and instructor feedback.

11. Semesters previously offered as an experimental course (101, 201, 301, 401):

12. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

   1) 2) 3) 4) 5) 6)

   Recommended by Department

   Recommended by Discipline Specific Curricula Committee

   Approved by Curricula Committee:

   Approved by Faculty Senate:

   (Chair signature)
   (Chair signature)
   (Chair signature)
   (Chair signature)

   Date: 10/16/09
   Date: 11/4/09
   Date: 
   Date: 

(Revised 1/29/09)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes
(Check all changes.)
New Course ☐ Course Deletion ☑ Credit Hours ☑ Prerequisites ☐
Course Title ☐ Catalog Description ☐ Course Number ☑ Co-listing ☐

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Mechanical and Aerospace Engineering
2. Discipline and Course Number: Present: Engineering Mechanics 324 Proposed:
3. Course Title: Present: Engr Plasticity I Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   Present:
   Proposed:

Proposed:

7. Prerequisites:
   Present:
   Proposed:

8. Required for Majors: ☐ Elective for Majors: ☐

9. Justification: The engineering mechanics programs have all been discontinued and there are no
   more students enrolled. All engineering mechanics courses will either be eliminated or
   renamed/renumbered using a curricular designator other than ENG MECH.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1) 2) 3)
   4) 5) 6)

Recommended by Department
(Chair signature) Date: 10/30/09

Recommended by Discipline Specific Curricula Committee
(Chair signature) Date: 11/09

Approved by Curricula Committee:
(Chair signature) Date: 

Approved by Faculty Senate:
(Chair signature) Date: 

08/19/09

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**Course Change Form (CC)**

This form is for creating or modifying permanent courses.

### Course Changes

<table>
<thead>
<tr>
<th>New Course</th>
<th>Course Deletion</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
<th>Course Title</th>
<th>Catalog Description</th>
<th>Course Number</th>
<th>Co-listing</th>
</tr>
</thead>
</table>

**Course Information**

(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. **Department:** Mechanical and Aerospace Engineering
2. **Discipline and Course Number:** Present: Engineering Mechanics 424 Proposed:
3. **Course Title:** Present: Engr Plasticity II Proposed:
   - **Abbreviated Course Title:**
   - **Catalog Description** (24 Spaces or Less. Only needed for New Courses or Title Changes.) Present:
   - **Proposed:**

4. **Credit Hours:** Present: Lecture: Lab: Total: Proposed: Lecture: Lab: Total:

5. **Prerequisites:** Present: Proposed:

6. **If course requires field trip check box:**

7. **Required for Majors:** □ **Elective for Majors:** □

8. **Justification:** The engineering mechanics programs have all been discontinued and there are no more students enrolled. All engineering mechanics courses will either be eliminated or renamed/renumbered using a curricular designator other than ENG MECH.

9. **Semesters previously offered as an experimental course (101, 201, 301, 401):**

10. **List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.**
    1) 2) 3) 4) 5) 6)
    - **Recommended by Department:** Date: 10/19/09
    - **Recommended by Discipline Specific Curricula Committee:** Date: 11/1/09
    - **Approved by Curricula Committee:** Date:
    - **Approved by Faculty Senate:** Date: 08/19/09

(Revised 1/31/08)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
- New Course □
- Course Deletion □
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing □

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Mechanical and Aerospace Engineering
2. Discipline and Course Number: Present: Aero Eng 321 Proposed:
3. Course Title: Present: Aerodynamics Cad Design Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   Present:
   Proposed:
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:

5. If course requires field trip check box: □

6. Credit Hours:
   Present: Lecture: Lab: Total:
   Proposed: Lecture: Lab: Total:

7. Prerequisites:
   Present:
   Proposed:

8. Required for Majors: □
   Elective for Majors: □

9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.
   1) 2) 3)
   4) 5) 6)
   Recommended by Department ____________________________ (Chair signature) Date: 10/30/09
   Recommended by Discipline Specific Curricula Committee __________________ (Chair signature) Date: 01/09
   Approved by Curricula Committee: ____________________ (Chair signature) Date: 
   Approved by Faculty Senate: ___________________________ (Chair signature) Date: 

08/21/09

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Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes
(Select all changes.)
New Course □ Course Deletion □ Credit Hours □ Prerequisites □
Course Title □ Catalog Description □ Course Number □ Co-listing □

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Mechanical and Aerospace Engineering
2. Discipline and Course Number: Present: Aero Eng 341 Proposed:
3. Course Title: Present: Exper Stress Analysis I Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:
5. If course requires field trip check box □
6. Credit Hours:
   Present: Lab: Total:
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present:
   Proposed:
8. Required for Majors: □ Elective for Majors: □
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.
10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.
   1)  2)  3)  4)  5)  6)
   Recommended by Department
   (Chair signature)
   Date: 11/10/09
   Recommended by Discipline Specific Curricula Committee
   (Chair signature)
   Date: 11/10/09
   Approved by Curricula Committee:
   (Chair signature)
   Date:
   Approved by Faculty Senate:
   (Chair signature)
   Date:
   (Revised 1/31/09)


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Course Change Form (CC)

This form is for creating or modifying permanent courses.

**Course Changes**  (Check all changes.)
- New Course □
- Course Deletion ☑
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing ☑

**Course Information**  (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Mechanical and Aerospace Engineering
2. Discipline and Course Number: Present: Aero Eng 487  Proposed:
3. Course Title: Present: Finite Elem Approx III  Proposed:
   Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   Present:
   Proposed:
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:
5. If course requires field trip check box: □
6. Credit Hours:
   Present:  Lecture:  Lab:  Total:
   Proposed:  Lecture:  Lab:  Total:
7. Prerequisites:
   Present:
   Proposed:
8. Required for Majors: □  Elective for Majors: □
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.
1) Mc Eng 487
2) 
3) 
4) 
5) 
6) 
Recommended by Department: Date: 
(Chair signature)
Recommended by Discipline Specific Curricula Committee: Date: 
(Chair signature)
Approved by Curricula Committee: Date: 
(Chair signature)
Approved by Faculty Senate: Date: 
(Chair signature)

08/21/09

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Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
New Course □  Course Deletion □  Credit Hours □  Prerequisites □
Course Title □  Catalog Description □  Course Number □  Co-listing □

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Departments: Mechanical and Aerospace Engineering
2. Discipline and Course Number: Present: Mech Eng 337  Proposed:
3. Course Title: Present: Atmospheric Science  Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:
5. If course requires field trip check box: □
6. Credit Hours:
   Present:  Lecture: Lab: Total:
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present:
   Proposed:
8. Required for Majors: □  Elective for Majors: □
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.
10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.
   1)  2)  3)
   4)  5)  6)

Recommended by Department ____________________________
(Chair signature)

Recommended by Discipline Specific Curricula Committee ____________________________
(Chair signature)

Approved by Curricula Committee: ____________________________
(Chair signature)

Approved by Faculty Senate: ____________________________
(Chair signature)

Date: 11/1/09
Date: 08/21/09

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Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
New Course □ Course Deletion □ Credit Hours □ Prerequisites □
Course Title □ Catalog Description □ Course Number □ Co-listing □

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Mechanical and Aerospace Engineering
2. Discipline and Course Number: Present: Mech Engr 341 Proposed:
3. Course Title: Present: Experimental Stress Anal I Proposed:
   Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:

5. If course requires field trip check box: □
6. Credit Hours:
   Present: Lecture: Lab: Total:
   Proposed: Lecture: Lab: Total:

7. Prerequisites:
   Present:
   Proposed:

8. Required for Majors: □ Elective for Majors: □
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.
   1) 2) 3)
   4) 5) 6)

Recommended by Department ___________________________ (Chair signature) Date: 08/21/09

Recommended by Discipline Specific Curricula Committee ___________________________ (Chair signature) Date: 11/13/09

Approved by Curricula Committee: ___________________________ (Chair signature) Date: 

Approved by Faculty Senate: ___________________________ (Chair signature) Date: 

(Revised 1/31/09)

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Course Change Form (CC)

This form is for creating or modifying permanent courses.
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes
(Check all changes.)
- New Course
- Course Deletion
- Credit Hours
- Prerequisites

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Mechanical and Aerospace Engineering
2. Discipline and Course Number: Present: Mech Eng 424  Proposed:
3. Course Title: Present: Theory of Stability II  Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:

5. If course requires field trip check box:
6. Credit Hours:
   Present:  Proposed:

7. Prerequisites:
   Present:
   Proposed:

8. Required for Majors:  Elective for Majors:

9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1)  2)  3)  4)  5)  6)  

   Recommended by Department  (Chair signature)  Date: 10/29/09

   Recommended by Discipline Specific Curricula Committee  (Chair signature)  Date: 11/1/09

   Approved by Curricula Committee:  (Chair signature)  Date: 

   Approved by Faculty Senate:  (Chair signature)  Date: 

08/21/09

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Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes
- New Course
- Course Deletion
- Credit Hours
- Prerequisites
- Course Title
- Catalog Description
- Course Number
- Co-listing

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Biological Sciences
2. Discipline and Course Number: Present: Bio 315 Proposed:
3. Course Title: Present: Developmental Biology Proposed:
   Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   Present: Proposed:
4. Catalog Description (40 Words or Less)
   Present: Proposed:

5. If course requires field trip check box: □
6. Credit Hours:
   Present: Lecture: 3 Lab: NA Total: 3
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present: Bio 115 and Bio 211
   Proposed: Bio 211
8. Required for Majors: □ Elective for Majors: □
9. Justification: Prerequisites are being modified given changes to our curriculum.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1) 2) 3)
   4) 5) 6)

   Recommended by Department __________________________ (Chair signature) Date: 10/19/09
   Recommended by Discipline Specific Curricula Committee __________________________
     (Chair signature) Date: 11/3/2009
   Approved by Curricula Committee: __________________________ (Chair signature) Date:
   Approved by Faculty Senate: __________________________ (Chair signature)

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Course Change Form (CC)
This form is for creating or modifying permanent courses.

Course Changes
(Check all changes.)
New Course □ Course Deletion □ Credit Hours □ Prerequisites □
Course Title □ Catalog Description □ Course Number □ Co-listing □

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Biological Sciences
2. Discipline and Course Number: Present: Bio 345       Proposed:
3. Course Title: Present: Comparative Chordate Anatomy
Proposed:
Abbreviated Course Title:
(24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
Present:

Proposed:

5. If course requires field trip check box: □
6. Credit Hours:

Present:                  Lecture: 2      Lab: 2      Total: 4
Proposed:                  Lecture:    Lab:    Total:

7. Prerequisites:
Present:       Bio 110 or 111, and Bio 115 and 116
Proposed:       Bio 113 and Bio 114

8. Required for Majors: □    Elective for Majors: □
9. Justification: Prerequisites are being modified given changes to our curriculum.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.
1)    2)    3)
4)    5)    6)

Recommended by Department ____________________
(Chair signature)    Date: 10/19/09

Recommended by Discipline Specific Curricula Committee ____________________
(Chair signature)    Date: 11/3/2009

Approved by Curricula Committee: ____________________
(Chair signature)    Date: __________

Approved by Faculty Senate: ____________________
(Chair signature)    Date: __________

10/19/09

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Course Change Form (CC)

Course Changes (Check all changes.)
- New Course □
- Course Deletion □
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing □

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Materials Science and Engineering
2. Discipline and Course Number: Present: Cer Eng 407 Proposed:
3. Course Title: Present: Bhv-Mtls Vi-Mechanical Proposed:
   Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:

5. If course requires field trip check box: □
6. Credit Hours:
   Present: Lecture:
   Proposed: Lecture:
   Lab: Total:
   Lab: Total:
7. Prerequisites:
   Present:
   Proposed:
8. Required for Majors: □
   Elective for Majors: □
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1) 2) 3) 4) 5) 6) Recommended by Department
   Recommended by Discipline Specific Curricula Committee
   Approved by Curricula Committee:
   Approved by Faculty Senate:

(date)

(revised: 1/31/08)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
- New Course □
- Course Deletion □
- Credit Hours □
- Prerequisites □
- Course Title □
- Catalog Description □
- Course Number □
- Co-listing □

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Materials Science and Engineering
2. Discipline and Course Number: Present: Met Eng 351       Proposed:
3. Course Title: Present: Min Proc II Flo & Hydro       Proposed:
   Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:

5. If course requires field trip check box: □
6. Credit Hours:
   Present: Lecture: Lab: Total:
   Proposed: Lecture: Lab: Total:

7. Prerequisites:
   Present:
   Proposed:

8. Required for Majors: □  Elective for Majors: □
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, Initiated by Dept. Chair, if signature does not appear below.
1)  
2)  
3)  
4)  
5)  
6)  

Recommended by Department ____________________________
(Chair signature)  Date: 10/12/09

Recommended by Discipline Specific Curricula Committee ____________________________
(Chair signature)  Date: 11/1/09

Approved by Curricula Committee: ____________________________
(Chair signature)  Date: __________

Approved by Faculty Senate: ____________________________
(Chair signature)  Date: __________

Revised 1/31/08
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
New Course ☐ Course Deletion ☒ Credit Hours ☐ Prerequisites ☐
Course Title ☐ Catalog Description ☐ Course Number ☐ Co-listing ☐

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Materials Science and Engineering
2. Discipline and Course Number: Present: Met Eng 455 Proposed:
3. Course Title: Present: Chemical Metallurgy Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:

5. If course requires field trip check box: ☐
6. Credit Hours:
   Present: Lecture: Lab: Total:
   Proposed: Lecture: Lab: Total:

7. Prerequisites:
   Present:
   Proposed:

8. Required for Majors: ☐ Elective for Majors: ☐
9. Justification: This course has not been taught within the past 10 years, and there are no plans to
   teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

   1) 
   2) 
   3) 
   4) 
   5) 
   6) 

   Recommended by Department
   (Chair signature)

   Date: 10/2/09

   Recommended by Discipline Specific Curricula Committee
   (Chair signature)

   Date: 11-1-09

   Approved by Curricula Committee:
   (Chair signature)

   Date: 

   Approved by Faculty Senate:
   (Chair signature)

   Date: 

(Revised 1/31/08)

08/21/09

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Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
- New Course
- Course Deletion
- Credit Hours
- Prerequisites

Course Title
- Catalog Description
- Course Number
- Co-listing

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Civil, Architectural and Environmental Engineering
2. Discipline and Course Number: 
   Present: Civ Eng 432
   Proposed:
3. Course Title: 
   Present: Turbines-Opn Chnl Flow
   Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   Present:
   Proposed:

4. Catalog Description (40 Words or Less)
   Present:
   Proposed:

5. If course requires field trip check box

6. Credit Hours:
   Present:
   Proposed:
   Lecture:
   Lab:
   Total:

7. Prerequisites:
   Present:
   Proposed:

8. Required for Majors
   Elective for Majors

9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): 

11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.

   1) 
   2) 
   3) 
   4) 
   5) 
   6) 

   Recommended by Department (Chair signature) 
   Date: 10/15/09

   Recommended by Discipline Specific Curricula Committee (Chair signature) 
   Date: 11-1-09

   Approved by Curricula Committee: (Chair signature) 
   Date: 

   Approved by Faculty Senate: (Chair signature) 
   Date: 

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Course Change Form (CC)
This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
New Course ☐ Course Deletion ☒ Credit Hours ☐ Prerequisites ☐
Course Title ☐ Catalog Description ☐ Course Number ☐ Co-listing ☐

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Civil, Architectural and Environmental Engineering
2. Discipline and Course Number: Present: CIV ENG 466 Proposed:
3. Course Title: Present: Wastewater Treatment II
   Proposed:
Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:
5. If course requires field trip check box: ☐
6. Credit Hours:
   Present: Lecture: Lab: Total:
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present:
   Proposed:
8. Required for Majors: ☐ Elective for Majors: ☐
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.
10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1)  2)  3)
   4)  5)  6)
Recommended by Department ___________________________ Date: 10/15/09
   (Chair signature)
Recommended by Discipline Specific Curricula Committee ___________________________
   (Chair signature) Date: 11/1-09
Approved by Curricula Committee: ___________________________ Date: __________
   (Chair signature)
Approved by Faculty Senate: ___________________________ Date: __________
This fax was received by GFI FAXmaker fax server. For more information, visit: http://www.gfi.com
Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes
(Select all changes.)
New Course ☐ Course Deletion ☒ Credit Hours ☐ Prerequisites ☐
Course Title ☐ Catalog Description ☐ Course Number ☐ Co-listing ☐

Course Information
(1-9 Must Be Completed. Leave “Proposed” items blank if no change is being made.)
1. Department: Civil, Architectural and Environmental Engineering
2. Discipline and Course Number: Present: Civ Eng 491 Proposed:
3. Course Title: Present: Internship Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   Present:
4. Catalog Description (40 Words or Less)
   Present:
   Proposed:
5. If course requires field trip check box: ☐
6. Credit Hours:
   Present: Lecture: Lab: Total:
   Proposed: Lecture: Lab: Total:
7. Prerequisites:
   Present:
   Proposed:
8. Required for Majors: ☐ Elective for Majors: ☒
9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.
   1) ____________________________  2) ____________________________  3) ____________________________
   4) ____________________________  5) ____________________________  6) ____________________________
   Recommended by Department ____________________________ (Chair signature) Date: 10/15/09
   Recommended by Discipline Specific Curricula Committee ____________________________ (Chair signature)
   Approved by Curricula Committee: ____________________________ (Chair signature) Date: __________
   Approved by Faculty Senate: ____________________________ (Chair signature) Date: __________

(Revised 1/31/08)
Course Change Form (CC)
This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)
New Course □  Course Deletion □  Credit Hours □  Prerequisites □
Course Title □  Catalog Description □  Course Number □  Co-listing □

Course Information
1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.

1. Department: Civil, Architectural and Environmental Engineering
2. Discipline and Course Number: Present: Civ Eng 499  Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
3. Course Title: Present: Case Studies in Civ Engr
   Proposed:
   Catalog Description (40 Words or Less)
   Present:
   Proposed:
5. If course requires field trip check box: □
6. Credit Hours:
   Present:                      Lecture:                    Lab:                    Total:
   Proposed:                    Lecture:                    Lab:                    Total:
7. Prerequisites:
   Present:
   Proposed:
8. Required for Majors: □  Elective for Majors: □
9. Justification: This course has not been taught within the past 10 years, and there are no plans to
   teach it in the near future.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1)  2)  3)  4)
   5)  6)

   Recommended by Department ____________________________
   (Chair signature)
   Date: 10/15/09

   Recommended by Discipline Specific Curricula Committee ____________________________
   (Chair signature)
   Date: 11/1-09

   Approved by Curricula Committee: ____________________________
   (Chair signature)
   Date: __________

   Approved by Faculty Senate: ____________________________
   (Chair signature)
   Date: __________

   (Revised 1/31/08)

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Experimental Course Form (EC)

This form must be filed with the Secretary to the Campus Curricula Committee, after the department chair's notation, by the appropriate deadline. Filing deadlines for inclusion in the initial release of the Schedule of Classes are as follows:

Summer and Fall Semester Offerings – January 1
Spring Semester Offerings – August 1

An EC form must be submitted each semester it is to be offered, not to exceed two offerings. An experimental course that is required should be submitted on a CC form. Co-listed offerings should be submitted on one form, originating from the primary discipline.

Department: Mining and Nuclear Engineering

Discipline and Course Number: Mi Eng 401

Course Title: Geostatistics

Abbreviated Title (24 spaces or less): Geostatistics

Instructor(s): Kwame Awuah-Offei

Credit Hours: Lecture: 3  Lab: 0  Total: 3

Prerequisites: Graduate standing or consent

Semester(s) previously taught: None

Brief Course Description: (40 words or less)
Definition of geostatistical data; theory of random fields; autocorrelation and measures of spatial variability including semivariograms, variograms and covariance functions; and spatial prediction and validation. Case studies in mineral resource estimation and environmental pollutant prediction will be presented.

List all co-listed courses: Include initials of Dept. Chair, if signature is not already included below.

1)  2)  3)

4)  5)  6)

Department Chair: [Signature]  Date: 09/23/09

Discipline Specific Curricula Committee: [Signature]  Date: 10/19/09

Curricula Committee: [Signature]  Date: 09/23/09

(Revised 1/31/2008)
Experimental Course Form (EC)

This form must be filed with the Secretary to the Campus Curricula Committee, after the
department chair's and college dean's notation, by the appropriate deadline. Filing deadlines
for inclusion in the pre-registration Schedule of Classes are as follows:

Summer and Fall Semester Offerings – January 1
Winter Semester Offerings – August 1

Filing deadlines for inclusion in the Revised Schedule of Classes are April 30 and October 1. An
EC form must be submitted each semester it is to be offered, not to exceed two offerings. An
experimental course that is required should be submitted on a CC form. Co-listed offerings
should be submitted on one form, originating from the primary discipline.

School or College:

Department: Geological Sciences and Eng
Discipline and Course Number: PE 301
Course Title: Well Completion Design
Abbreviated Title (24 spaces or less): Well Compltn Design
Instructor(s): Shari Dunn-Norman
Credit Hours: Lecture: 3 Lab: 0 Total: 3
Prerequisites: PE 241

Semester(s) previously taught: Fall 2007; 13 students

Brief Course Description: (40 words or less)
An overview of the hardware, fluids and processes employed in completing oil and gas wells.
Examination of types of well completions and their use; influence of well geometry and considerations
in designing well completions. Brief overview of sand control, multilaterals and intelligent well
completions. Review of completion examples.

List all co-listed courses: Include initials of Dept. Chair(s) and Dean(s) if signatures are not already
included below.

1. 
2. 
3. 

Department Chair: [Signature]

College/School Dean: [Signature]

UMR Curricula Committee: [Signature]

Date: 9/23/05
Date: 10-19-09
Date: 9/22/09

(Revised 2/14/2003)
Experimental Course Form (EC)

This form must be filed with the Secretary to the Campus Curricula Committee, after the department chair's notation, by the appropriate deadline. Filling deadlines for inclusion in the initial release of the Schedule of Classes are as follows:

Summer and Fall Semester Offerings – January 1
Spring Semester Offerings – August 1

An EC form must be submitted each semester it is to be offered, not to exceed two offerings. An experimental course that is required should be submitted on a CC form. Co-listed offerings should be submitted on one form, originating from the primary discipline.

Department: Geological Sciences and Engineering

Discipline and Course Number: Pet Eng 401

Course Title: Advanced Well Completion Design

Abbreviated Title (24 spaces or less): Adv Well Compltn Design

Instructor(s): S. Dunn-Norman

Credit Hours: Lecture: 3 Lab: Total: 3

Prerequisites: PE 241

Semester(s) previously taught:

Brief Course Description: (40 words or less)
An overview of the hardware, fluids and processes employed in completing oil and gas wells. Examination of types of well completions and their use; influence of well geometry and considerations in designing well completions. Brief overview of sand control, multilaterals and intelligent well completions. Review of completion examples and exercises with design software.

List all co-listed courses: Include initials of Dept. Chair, if signature is not already included below.

1) 2) 3)

4) 5) 6)

Department Chair: [Signature]
Date: 9/25/09

Discipline Specific Curricula Committee: [Signature]
Date: 10-9-09

Curricula Committee: [Signature]
Date: 

(Revised 1/31/2009)

09/22/09

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Experimental Course Form (EC)

This form must be filed with the Secretary to the Campus Curricula Committee, after the department chair's and college dean's notation, by the appropriate deadline. Filing deadlines for inclusion in the pre-registration Schedule of Classes are as follows:

Summer and Fall Semester Offerings – January 1
Winter Semester Offerings – August 1

Filing deadlines for inclusion in the Revised Schedule of Classes are April 30 and October 1. An EC form must be submitted each semester it is to be offered, not to exceed two offerings. An experimental course that is required should be submitted on a CC form. Co-listed offerings should be submitted on one form, originating from the primary discipline.

School or College: Engineering
Department: Civil
Discipline and Course Number: 301
Course Title: Concrete Pavement Design
Abbreviated Title (24 spaces or less):
Instructor(s): David Richardson
Credit Hours: Lecture: 3 Lab: 0 Total: 3
Prerequisites: CE 216 with a grade of "C" or better
Semester(s) previously taught: W 2008

Brief Course Description: (40 words or less)
Structural design of rigid pavements including loading characteristics, properties of pavement components, stress distribution, and the effects of climatic variables on design criteria.

List all co-listed courses: Include initials of Dept. Chair(s) and Dean(s) if signatures are not already included below.
1. 
2. 
3. 
4. 
5. 
6.

Department Chair: [Signature]
Date: 9/28/09

College/School Dean: [Signature]
Date: 10-19-09

UMR Curricula Committee: Chair Signature
Date: __________________

09/28/09

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CE 301 COURSE POLICY

1. Grading: Exams (80%), Homework (20)
   Grades: A = 90 to 100%, B = 80 to 89%, C = 70 to 79%, D = 60 to 69%, F - below 60

2. Homework: Due at the beginning of the class on day due. Anytime past that point will be considered late. Late homework will be docked 10%. Homework more than 1 day late will be docked 50% and may not be graded. After the set is graded, late homework will not be accepted.

3. There is no "extra work" for anyone to improve a grade.

4. There is no "makeup" test to improve a poor grade, or for unexcused absence from a test. In the latter case the grade is zero on the test. Asking faculty to design a special exam just for one person for the student's convenience is unprofessional, at the very least.

5. If anyone misses an examination, or wants to, they are to turn in a neatly written statement as to why it was missed, with any helpful documentation. For example, if an exam is missed for a medical reason, there is very little hope without a statement from a doctor treating you. "Working on other projects", "not quite ready", "on an interview trip", "I forgot", "looking for an apartment", "want to leave town early" are typical excuses worth zero on tests. You will be told as soon as possible whether the excuse is acceptable.

6. Partial credit is not open to dispute. However, an error in grade computation should be pointed out. Time limit is one week from return of test.

7. As far as the course grade is concerned, it is of no relevance if a test score is, say, 70% because of all silly errors as opposed to conceptual errors. The only thing that counts is that it is 70%. It will not be re-evaluated later on some vague basis of the errors being somehow less significant, and the 70 should be 73, etc. Tests are simply not open for re-evaluation on any basis other than an error in marking a correct answer wrong. After all, differences in mechanical errors vs.
conceptual errors were taken into account in arriving at that numerical grade; so there is nothing left to consider.

8. You are being graded strictly on this course and **not** on the basis that if you get one letter grade higher you will be allowed to remain in college, etc. That is your problem and all faculty resent any student trying to unload his/her accumulated history of scholastic difficulty on them. We do not "negotiate" grades, as most of you know. Scholastic probation, etc., are irrelevant to my grading procedure. **All students are graded strictly on performance.** Neither my opinion nor your opinion of what you "really" know, nor personality, nor any other factor is a consideration in your grade.

9. **Do not schedule events to occur during finals week,** such as interview trips, vacations, job start-ups, marriages, elective surgery, etc. **Don't even ask.** As stated before, a missed exam results in a zero grade. Please inform anyone who may invite you to be in a wedding party that you will **not be available** on the day of the CE 301 exam. Do this early in the semester.

10. **Attendance policy:** Students are expected to attend class regularly. **Attendance will be taken at the beginning of class.** If you are tardy, you will be counted as absent; in this case, you should notify the instructor of your attendance at the end of the period. Any time after that, you will be counted as absent. **You will lose one letter grade for every 6 unexcused absences** [excused absences are limited to school-sanctioned activities. All others are unexcused]. You may be dropped from the class if absences become excessive.

11. **Student Academic Dishonesty.** Academic honesty is essential for the intellectual life of the University and for your continued academic and professional development and growth. As your instructor, I have a very high standard for academic honesty in all your work for this class. You as a student in this class have an obligation to adhere to that high standard. **Should a case of academic dishonesty arise during the course of the semester,** I will do the following: I will assign a failing grade to the work in question. I may fail you for the course. And I will refer the incident to both the department Chair and to the Vice Provost for Undergraduate and Graduate
Studies as required in Section 200.010 of the Collected Rules and Regulations of the University of Missouri.

By enrolling in this course and receiving this syllabus, whether in printed or electronic format, you are certifying knowledge of Sections 200.100 (Standard of Conduct) and 200.020 (Rules of Procedures in Student Conduct Matters) in the Collected Rules and Regulations of the University of Missouri and are pledging to abide by them. If you have not yet read these Sections, please do so. They may be found at the following URL address:

A more recent site:
http://registrar.mst.edu/academicregs/index.html

An example of academic dishonesty is as follows. You must not place in any written assignment, lab report or otherwise, material that has been lifted, scanned, or copied, from any other document (eg other student's work, "files", etc), except for those specifically approved by the instructor.

12. Please do not email the instructor asking for your grade at the end of the semester.

13. Disability Support Services: http://dss.mst.edu: If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need to request that the Disability Services staff send a letter to me verifying your disability and specifying the accommodation you will need before I can arrange your accommodation.

Course Policy CE301.doc
**CE 301 CONCRETE PAVEMENT DESIGN**

**PREREQUISITES:** Preceded by CE 216 with a grade of "C" or better

**SEMESTER:** Winter 2010

**TEXT:**
*Concrete Pavement Design, Construction, and Performance* (Delatte)

**INSTRUCTOR'S NAME:** Dr. David N. Richardson

**INSTRUCTOR'S OFFICE:** 126 Butler-Carlton Hall

**INSTRUCTOR'S PHONE:** (573)341-4487

**INSTRUCTOR'S e-mail:** dnr@mst.edu

<table>
<thead>
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<td>CN; Ch.3: 62-68</td>
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<td>G. Environmental Effects</td>
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<td>4. Frost Action</td>
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III. DESIGN FUNDAMENTALS

1. Introduction
2. Concrete Materials
3. Design Methods/Theories
4. Traffic
5. Stresses & Deflections
6. Joints
7. Tie bars
8. Dowels
9. Reinforcement
10. Design Features
11. Drainage
12. Typical Sections
13. Specifications

Ch. 7: 129-130
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Courses notes

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IV. PCA METHOD
A. Introduction
B. Long Method
C. Simplified Method
D. STREETPAVE

V. AASHTO METHOD
VI. MEPDG METHOD

VII. PARKING LOTS
A. Normal Duty
B. Industrial

VIII. LIFE-CYCLE COSTS
IX. CONSTRUCTION
A. Paving
B. Temperature Management

XI. OVERLAYS

XI. OVERLAYS

FINAL EXAM REVIEW

EXAM III

CE301SylabusW2008.doc (2/7/07;11-5-07;1-9-07;3-20-08;4-8-08)
Experimental Course Form (EC)

This form must be filed with the Secretary to the Campus Curricula Committee, after the department chair's notation, by the appropriate deadline. Filing deadlines for inclusion in the Initial release of the Schedule of Classes are as follows:

Summer and Fall Semester Offerings - January 1
Spring Semester Offerings - August 1

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Department: Civil, Architectural, and Environmental Engineering

Discipline and Course Number: CE301

Course Title: Structural Dynamics

Abbreviated Title (24 spaces or less): Structural Dynamics

Instructor(s): Genda Chen

Credit Hours: Lecture: 3.0 Lab: 0 Total: 3

Prerequisites: IDE150, CE/Arch217

Semester(s) previously taught: WS08

Brief Course Description: (40 words or less)
This course presents the fundamental concepts in structural dynamics and force distribution in structures under dynamic loads. Specifically, the natural frequency and mode shape of structural systems are investigated. The response and behavior of structural components and systems are studied under machine-induced, blast, wind and earthquake excitations. Both hand calculations and computer methods for the analysis of lumped and distributed mass models are developed.

List all co-listed courses: Include initials of Dept. Chair, if signature is not already included below.
1)_________ 2) CE301 3)_________
4)_________ 5)_________ 6)_________

Department Chair: [Signature]

Discipline Specific Curricula Committee: [Signature]

Curricula Committee: [Signature]

Date: 9/28/09

Date: 10/19/09

09/19/09 (Revised 1/31/2008)
CE/ArchE301 STRUCTURAL DYNAMICS
Winter Semester 2010

Instructor: Genda Chen, Ph.D., P.E., F. ASCE
Office: Butler-Carlton Hall, Room 328
Class Schedule: MW 3:00 p.m. – 4:15 p.m. in CE317
Office Hours: MW, 1:00 p.m. – 3:00 p.m.
4:15 p.m. – 5:30 p.m.

Textbook:
Anil K. Chopra, Dynamics of Structures: Theory and Applications to Earthquake Engineering.

Grading:
- Quizzes (2) 50% (see Quizzes below)
- Homework 20%
- Final exam 30%

Quizzes: Two quizzes will be given during the semester. If a quiz has to be missed for a valid reason (“on the interview trip” is NOT a valid reason), approval from instructor must be obtained in advance. If approved, students will be given an opportunity to take one comprehensive exam during the final exam week for one missing quiz.

Homework: Assigned problems will be worked in pencil on 8 ½ x 11 in. engineering paper on one side of the sheet, with each problem starting on a new page or with one inch spacing between problems. The presentation will include a statement of the problem, a neat sketch (optional), and an orderly presentation of the solution. Assigned problems will be collected.

Attendance Policy: Any students with three or more absences without a valid reason may be asked to drop out of the class.

Objectives:

This course presents the fundamental concepts in structural dynamics and the force distribution in structures under dynamic loads. Specially, the natural frequency and mode shape of structural systems are investigated. The response and behavior of structural components and systems are studied under machine-induced, blast, wind and earthquake excitations. Both hand calculations and computer methods for the response analysis of lumped and distributed mass models are developed.

On completion of this course, students should be able to:

1. Explain the resonance and beating phenomena as well as the role of damping and inertia in structural dynamics.
2. Formulate the equation of motion of a discrete or distributed structural system.
3. Understand and identify the dynamic properties of a discrete or distributed structural system.
4. Apply various techniques to solve for the frequencies and mode shapes of structures.
5. Determine the responses of simple and complex structures under dynamic loads by modal and Ritz-vector analysis.
6. Formulate the damping matrix and apply it in the elastic analysis of structural responses.

Tentative Topics:
1. Introduction and application of structural dynamics theory in design
2. Dynamic properties and equation of motion
3. Resonance and beating phenomena
4. Undamped response of simple structures (one degree of freedom)
5. Damped response of simple structures
6. Effects of various dynamic loads
7. Identification of simple structures
8. Natural frequency and mode shapes of complex structures (multiple degree of freedom)
9. Modal analysis of complex structures
10. Damping matrix formulation
11. Numerical solution of structural responses
12. Ritz vector and Rayleigh-Ritz analysis
13. Formulation of the equation of motion of consistent mass systems
14. Boundary condition and mode shapes of consistent mass systems
15. Discretization of distributed structural systems and accuracy
16. Computer model and analysis

Prerequisites: CE/ArchE217 and BE150 or equivalent.
Experimental Course Form (EC)

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Spring Semester Offerings – August 1

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Department: Civil, Architectural and Environmental Engineering

Discipline and Course Number: CE 401

Course Title: Special Concretes

Abbreviated Title (24 spaces or less): Special Concretes

Instructor(s): Prof. John J. Myers

Credit Hours: Lecture: 3 Lab: Total:

Prerequisites: Consent of Instructor with Graduate Standing

Semester(s) previously taught: Not Applicable

Brief Course Description: (40 words or less)

List all co-listed courses: Include initials of Dept. Chair, if signature is not already included below.
1) 2) 3) 4) 5) 6)

Department Chair: ____________________________ (Chair Signature) Date: 9/28/09

Discipline Specific Curricula Committee: ____________________________ (Chair signature) Date: 10-19-09

Curricula Committee: ____________________________ (Chair Signature) Date: ____________

09/28/09 (Revised 1/31/2006)

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Missouri University of Science and Technology
Department of Civil, Architectural, and Environmental Engineering
CE 401 – Special Concretes – Spring 2010

INSTRUCTOR
Dr. John J. Myers, P.E.
Associate Professor
325 Butler-Carleton CE Hall
1401 North Pine Street
Office Phone: 341-6618
Office Fax: 341-4729
Email: jmyers@mst.edu

CLASS MEETING: MW 2:00pm-3:15pm
ROOM: CE 317 (To Be Verified)
ADDITIONAL MEETING TIME: As Required – Arranged by Instructor
OFFICE HOURS: MTWR 8:30am-9:15am; or by appointment, 325 Butler Carlton Hall

COURSE DESCRIPTION:

TEXTBOOKS AND REFERENCE MATERIALS
Textbooks: There are no required textbooks for this course, but numerous references will be provided by the instructor. The following is some reference materials available at the library that will provide some background literature.

1. American Concrete Institute Building Code Requirements for Structural Concrete (ACI 318-08) and Commentary (ACI 318R-08).
7. Handouts provided by the Instructor.

COURSE OUTLINE:

Lectures:
The lectures will introduce specialized topics affiliated with concrete. This includes concrete specifications, optimization, specialized concretes (modified density, fiber reinforced concrete, high strength concrete, ultra-high strength concrete, self-consolidating concrete (NS and HS), polymer / polymer modified concrete, environmentally sensitive cementitious-based materials, self-healing / damage detection materials, rapid set-rapid patching materials], statistical data analysis processes, structural implications associated with material developments, and evaluation / ND/T/E aspects of concrete.
**Additional Class Meeting:**
The *Additional Meeting Time* will be assigned as designated by the instructor for any lab affiliated activities.

**Class Attendance:**
Class attendance is **required** and will be monitored by the instructor. If an emergency arises in which you cannot attend class, please notify the instructor ahead of time, by email or phone, such that arrangements can be made for any missed handouts or homework assignments.

**Assignments:**
Assignments will be assigned throughout the semester and collected as designated by the instructor. Assignments must be neat and organized. *Homework assignments will be due as announced by the instructor when assigned.* Late homework will be accepted with a 20% penalty for each class meeting past due unless a late submission is approved by the instructor in advance.

**Report Assignments / Term Project:**
Several report assignments and a term project and presentation will be assigned during the semester. Final submission and presentation of the term project will be due on a date specified by the instructor when the project description is presented in class.

**Examinations:**
A mid-term exam will be given during a scheduled period. A final will be given at the end of the semester. Missed exams will count as zero. Exams cannot be made up except under very unusual circumstances approved prior to the scheduled exam date by the instructor.

**Grading System:**
Grades will be based on the performance of exams, assigned homework, and term project, as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>20%</td>
</tr>
<tr>
<td>Term Project</td>
<td>20%</td>
</tr>
<tr>
<td>Oral Presentation</td>
<td>10%</td>
</tr>
<tr>
<td>Mid-term Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Final</td>
<td>25%</td>
</tr>
</tbody>
</table>

**Grading Scale:**

- A ≥ 90
- 80 ≤ B < 90
- 70 ≤ C < 80
- 60 ≤ D < 70
- F < 60

Note: Cutoffs may be slightly lower, but will not be higher.

**Academic Dishonesty:**
Academic honesty is essential for the intellectual life of the University and for your continued academic and professional development and growth. As your instructor, I have a very high standard of academic honesty in all of your work in this class. You as a student in this class have an obligation to adhere to that high standard. Should a case of academic dishonesty arise during the course of this semester, I as the instructor shall make an academic judgment regarding your grade on the work in question and in this course if necessary. By enrolling in this course and receiving this syllabus, whether in printed or electronic format, you are certifying knowledge of Sections 200.010 (Standard of Conduct) and 200.020 (Rules of Procedures in Student Conduct Matters) in the Collected Rules and Regulations of the University of Missouri and are pledging to abide by them. If you have not yet read these Sections of the Collected Rules and Regulations, please do so immediately after class.
or at the next opportunity your schedule allows. They may be found at the following URL address:

**Educational Environment:**
It is very important to the Instructor that each student has a healthy productive learning environment. If any student feels their learning environment is being restricted by another individual, please feel free to discuss this with the instructor.

**Important Dates:**

<table>
<thead>
<tr>
<th>Event</th>
<th>Dates</th>
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<tbody>
<tr>
<td><strong>MLK Holiday</strong></td>
<td>Monday, Jan. 19</td>
</tr>
<tr>
<td>Last day to change HEARER status:</td>
<td>Monday, Feb. 23</td>
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<tr>
<td>Last day to drop without a ‘WD’ showing on transcript:</td>
<td>Monday, Feb. 23</td>
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<tr>
<td>Last day to add course:</td>
<td>Monday, Feb. 23</td>
</tr>
<tr>
<td><strong>Spring Recess</strong></td>
<td><strong>Thur. Mar. 12 – Sun. March 15</strong></td>
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<tr>
<td><strong>Spring Break</strong></td>
<td><strong>Mon. Mar. 23 – Sun. March 29</strong></td>
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<tr>
<td>Mid-semester:</td>
<td>Saturday, March 7</td>
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<tr>
<td>Last day for dropping a course:</td>
<td>Friday, April 17</td>
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<tr>
<td>Last class day:</td>
<td>Friday, May 8</td>
</tr>
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**BEST WISHES FOR A SUCCESSFUL SEMESTER**
CE 401 – Special Concretes Course Topics

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<th>COURSE TOPICS TO BE COVERED</th>
<th>MATERIAL ASPECTS</th>
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<td>1. Overview of Concrete and Concrete Specifications</td>
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<td>2. Evaluation of Concrete Performance: Techniques and Methods</td>
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<tr>
<td>3. Optimization of Concrete Materials</td>
<td>RA</td>
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<tr>
<td>&gt; Basic Fundamentals and Techniques</td>
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<tr>
<td>&gt; Conventional Techniques: NSC and HSC</td>
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<tr>
<td>&gt; Particle Packing Models (development and implementation)</td>
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<td>4. Modified Density Concretes</td>
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<td>5. Fiber Reinforced Concrete</td>
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<td>6. High Strength Concrete</td>
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<td>7. Ultra-High Strength Concrete</td>
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<td>8. Self Consolidating Concrete (Normal Strength and High Strength)</td>
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<td>8. Polymer Concrete</td>
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<td>9. Polymer Modified Concrete</td>
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<tr>
<td>10. Environmentally Sensitive (Sustainable) Cementitious Materials</td>
<td></td>
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<tr>
<td>11. Concrete with Self-Healing / Damage Detection Materials</td>
<td></td>
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<tr>
<td>12. Rapid Set Concretes including Rapid Patching Materials</td>
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<tr>
<td>13. Statistical Data Analysis and Characterization of Research Generated Data</td>
<td>RA</td>
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</tbody>
</table>

| STRUCTURAL ASPECTS                                               |                  |
| 14. Structural Implications of Material Advances on Design and Analysis |                  |
| 15. Modeling Aspects of Special Concretes                        | RA               |
| > HSC, UHSC, FRC                                                |                  |
| 16. Case Studies                                                 |                  |

| EVALUATION AND NDT/E ASPECTS OF CONCRETE                        |                  |
| 17. Non Destructive Testing and Evaluation Techniques for Concrete |                  |
| 19. Petrographic Examination of Concrete                        | Lab as arranged |
| > SEM Techniques and Imaging Systems                            |                  |
| > Sampling, Specimen Preparation, ASTM Test Methods, Interpretation of Results |                  |
| > NIH Imaging Software Application                              |                  |

RA – expected Report Assignment (assigned in addition to homework assignments).
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Department: Engineering Management & Systems Engineering

Discipline and Course Number: ENG MGT 301

Course Title: New Product Design

Abbreviated Title (24 spaces or less): New Product Design

Instructor(s): Katie Grantham Lough

Credit Hours: Lecture: 2.0 Lab: 1.0 Total: 3.0

Prerequisites: none

Semester(s) previously taught:

Brief Course Description: (40 words or less)
Students use physical modeling to characterize a team-based inter-disciplinary design project. A prototype is built and tested to determine the effectiveness of the various modeling techniques used.

List all co-listed courses: Include initials of Dept. Chair, if signature is not already included below.
1) 2) 3)
4) 5) 6)

Department Chair: __________________________ (Chair Signature) Date: 09/06/09

Discipline Specific Curricula Committee: __________________________ (Chair signature) Date: 10-19-09

Curricula Committee: __________________________ (Chair Signature) Date: __________

09/23/09

(Revised 1/31/2009)
Experimental Course Form (EC)

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Department: Mining and Nuclear Engineering

Discipline and Course Number: NE401

Course Title: Nuclear Medical Science

Abbreviated Title (24 spaces or less): Nuclear medical Science

Instructor(s): Hyoung Koo Lee & Bijaya Shrestha

Credit Hours: Lecture: 3 Lab: Total: 3

Prerequisites: NE312, Nuclear Radiation Measurement and Spectroscopy or equivalent

Semester(s) previously taught: None

Brief Course Description: (40 words or less)
Physics and technologies involved in various radiological imaging or treatment systems in the medical field, such as digital radiography, digital mammography, computed tomography, digital image processing, feature extraction, and nuclear medicine instruments will be covered.

List all co-listed courses: Include initials of Dept. Chair, if signature is not already included below.
1) EC 401

Department Chair: ____________________________ (Chair Signature) Date: 9-29-09

Discipline Specific Curricula Committee: ____________________________ Date: 10-19-09

Curricula Committee: ____________________________ (Chair Signature) Date: __________

09/29/09 (Revised 1/31/2008)
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Spring Semester Offerings – August 1

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Department: MAE

Discipline and Course Number: AE 301

Course Title: Plasma Physics I

Abbreviated Title (24 spaces or less): Plasma Physics I

Instructor(s): Joshua L. Rovey

Credit Hours: Lecture: 3.0 Lab: 0.0 Total: 3.0

Prerequisites: AE/ME 231 or Physics 221 or Nuc Eng 221

Semester(s) previously taught: None

Brief Course Description: (40 words or less)
Single particle orbits in electric and magnetic fields, moments of Boltzmann equation and introduction to fluid theory. Wave phenomena in plasmas. Diffusion of plasma in electric and magnetic fields. Analysis of laboratory plasmas and magnetic confinement devices. Introduction to plasma kinetic theory.

List all co-listed courses: Include initials of Dept. Chair, if signature is not already included below.

1) ME 301
2) NucE 301
3) Phys 301

Department Chair: ____________________________ Date: 10/6/09

Discipline Specific Curricula Committee: ____________________________ Date: 10-19-09

Curricula Committee: ____________________________ Date: 10/6/09

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AE/ME/Phys/NucE 301  
 Plasma Physics I  
 Spring 2010  
 3 Credit Hours

Instructor: J.L. Rovey, 292D Toomey Hall, Phone: 341-4613, email: roveyj@mst.edu  
Class Time and Location: TBD  
Office hours: TBD  
Pre-requisite: AE/ME 231 or Physics 221 or Nuc Eng 221

This is a Note-Intensive Class!  
YOU are responsible for attending class and taking notes.


Course Goals:  
1) Cover the basics of electromagnetism, gaskinetic theory, and plasma physics.  
2) Familiarize you with different applications and areas where plasma physics is important.  
3) Prepare you for industrial or graduate research work in the field of plasma physics.

Course Objectives: By the end of this course you should be able to  
1) Demonstrate a working knowledge of electrostatics, electromagnetics, and charged particle motion.  
2) Demonstrate a fundamental understanding of Debye lengths, cross-sections, collisions, velocity distributions, and adiabatic invariants.  
3) Describe the different modes and mechanisms whereby waves influence and drive a plasma discharge.  
4) Interpret a plasma probe diagnostic characteristic for different probe diagnostics used to interrogate plasmas.

Grading:  
A 90% and above  
B 80 - 89 %  
C 70 - 79 %  
F below 70%
Weighting:
Mid-term 30%
Homework (~ 6 HW assignments) 20%
Final Exam 50%

There are NO make-up exams. The final exam is cumulative (it covers everything). Homework will be due at the beginning of class. Late Homework will NOT be accepted. If I cannot read it, I will not grade it. This applies to both homework & exams.

Communication:
Please check your email daily. I also plan to use Blackboard to post HW, handouts, announcements, etc.

Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the System’s Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage. These rules apply!

Other Information:
If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need to request that the Disability Services staff send a letter to me verifying your disability and specifying the accommodation you will need before I can arrange your accommodation.
AE/ME/NucE/Phys 301 Plasma Physics I

I. Introduction (1 lecture)
   A. What is a plasma?
   B. What is it good for?
   C. Course Outline

II. Single Particle Motions (7 lectures)
   A. Uniform E&B fields
   B. Non-uniform E&B fields
   C. Time varying E&B fields
   D. Adiabatic Invariant
   E. Summary

III. Plasma Fluid (7 lectures)
   A. Introduction
   B. Fluid equation of motion
   C. Drifts perpendicular to B
   D. Drifts parallel to B
   E. Plasma approximation

IV. Waves in Plasmas (7 lectures)
   A. Plasma oscillations
   B. Ion waves
   C. Electrostatic waves
   D. Electromagnetic waves
   E. Cutoff and resonances
   F. CMA diagram

V. Diffusion & Resistivity (5 lectures)
   A. Diffusion & Mobility in Weakly ionized gas
   B. Diffusion across a magnetic field
   C. Single-fluid MHD Equations
   D. Bohm diffusion

VI. Equilibrium & Stability (6 lectures)
   A. Concept of Beta
   B. Diffusion of Magnetic field into plasma
   C. Two-stream instability
   D. Gravitational instability
   E. Weibel instability

VII. Kinetic Theory (4 lectures)
   A. Distribution function
   B. Equations of Kinetic Theory
   C. Landau damping

VIII. Nonlinear Effects (1 lectures)
   A. Sheaths

IX. Applications (4 lectures)
   A. Space Propulsion
   B. Fusion
   C. Astrophysics
   D. Materials Processing
Experimental Course Form (EC)

This form must be filed with the Secretary to the Campus Curricula Committee, after the department chair's notation, by the appropriate deadline. Filing deadlines for inclusion in the initial release of the Schedule of Classes are as follows:

- Summer and Fall Semester Offerings – January 1
- Spring Semester Offerings – August 1

An EC form must be submitted each semester it is to be offered, not to exceed two offerings. An experimental course that is required should be submitted on a CC form. Co-listed offerings should be submitted on one form, originating from the primary discipline.

Department: Biological Sciences

 Discipline and Course Number: Bio 401

Course Title: Special Topics: Advanced Nanobiotechnology

Abbreviated Title (24 spaces or less): Adv. Nanobiotechnology

Instructor(s): Yue-wern Huang

Credit Hours: Lecture: 2 Lab: 0 Total: 2

Prerequisites: Bio 211 and Bio 231 and graduate standing

Semester(s) previously taught: 0

Brief Course Description: (40 words or less)

Nanotechnology has emerged to change human economy and society in many aspects. Applications of nanotechnology in life science is termed nanobiotechnology. This graduate course describes recent development of nanobiotechnology and includes discussions of recent papers.

List all co-listed courses: Include initials of Dept. Chair, if signature is not already included below.

1) 2) 3) 4) 5) 6)

Department Chair: ____________________________ (Chair Signature) Date: 11/3/09

Discipline Specific Curricula Committee: ____________________________ (Chair Signature) Date: 11/3/09

Curricula Committee: ____________________________ (Chair Signature) Date: ____________

10/19/09

(Revised 1/31/2009)
Experimental Course Form (EC)

This form must be filed with the Secretary to the Campus Curricula Committee, after the department chair's and college dean's notation, by the appropriate deadline. Filing deadlines for inclusion in the pre-registration Schedule of Classes are as follows:

Summer and Fall Semester Offerings – January 1
Winter Semester Offerings – August 1

Filing deadlines for inclusion in the Revised Schedule of Classes are April 30 and October 1. An EC form must be submitted each semester it is to be offered, not to exceed two offerings. An experimental course that is required should be submitted on a CC form. Co-listed offerings should be submitted on one form, originating from the primary discipline.

School or College: ☐

Department: ENGL/TCH COM

Discipline and Course Number: TCH COM 401

Course Title: Special Topics: Web-Based Communication

Abbreviated Title (24 spaces or less): Web-Based Communication

Instructor(s): Dr. David Wright

Credit Hours: Lecture: 3 Lab: Total: 3

Prerequisites: none

Semester(s) previously taught: Spring 2008

Brief Course Description: (40 words or less)
A study of selected tools, strategies, and genres used to communicate via the World Wide Web. Emphasis on the communication of technical information.

List all co-listed courses: Include initials of Dept. Chair(s) and Dean(s) if signatures are not already included below.
1. 
2. 
3. 

Department Chair: [Signature]

College/School Dean: [Signature]

UMR Curricula Committee: [Signature]

Date: 10/16/09

Date: Oct. 16, 2009

Date: ____________________

(Revised 2/14/2002)