



**Minutes of the Campus Curricula Committee Meeting**

**January 9, 2018**

**8:30am, 106 Parker Hall**

**(For Faculty Senate Meeting of January 25, 2018)**

**Attendees:** Steve Raper, Barry Flachsbart, Petra Dewitt, Katie Shannon, Geariod MacSithigh, Kristy Giacomelli and Brittany Parnell

The following curriculum forms were discussed and approved:

**Course Change Forms:**

File: 942.1	ARCH ENG 4800: Principles of HVAC I
File: 2069.5	ARCH ENG 4820: Building Lighting Systems
File: 4219.5	ARCH ENG 4850: Building Electrical Systems
File: 2151.1	BIO SCI 2263: Ecology
File: 1513.1	BIO SCI 2383: Plant Biology
File: 2531.1	BIO SCI 3233: Evolution
File: 1843.1	BIO SCI 3313: Microbiology
File: 4501	CHEM ENG 6180: Advanced Applications of Computational Fluid Dynamics
File: 4070.7	CIV ENG 5515: Advanced Traffic Operations and Capacity Analysis
File: 4479	CIV ENG 5635: Phytoremediation and Natural Treatment Systems: Science and Design
File: 110.2	COMP SCI 1200: Discrete Mathematics for Computer Science
File: 774.1	ECON 6440: Advanced Environmental and Natural Resource Economics
File: 1737.1	ECON 6540: Advanced Energy Economics
File: 4499	FINANCE 5310: Financial Modeling
File: 2391.6	IS&T 4335: Fundamentals of Mobile Technology for Business
File: 1871.6	IS&T 6335: Mobile Technology for Business
File: 2342.7	PSYCH 5010: Seminar for Industrial/Organizational Psychology
File: 4500	PSYCH 5020: Introduction to Industrial-Organizational Psychology
File: 719.1	SYS ENG 6110: Risk Modeling and Optimization under Uncertainty

**Degree Change Forms:**

File: 143.20	ARC ENG-BS: Architectural Engineering BS
File: 230.12	AUTOENG-MI: Minor in Automation Engineering
File: 156.7	GE ENG-BS: Geological Engineering BS
File: 238.6	HCI-MI: Human-Computer Interaction and User Experience Minor
File: 234.20	INORGPS-MS: Industrial Organizational Psychology MS
File: 121.1	PRE LAW-MI: Pre Law Minor



File: 255            PROPOSED: Business Applications and Software Development Minor  
File: 249            PROPOSED: Master of Science in Explosive Technology  
File: 256            PROPOSED: Minor in Financial Technology (FinTech)

**Experimental Course Forms:**

File: 4492            BIO SCI 5001.001: Ichthyology  
File: 4497            BIO SCI 5001.002: Population and Conservation Genetics  
File: 4440            CHEM ENG 4001.001: Introduction to Phase Equilibrium  
File: 4491            CIV ENG 4001.001: Infrastructure Sustainability through Recycling  
File: 4490            CIV ENG 6001.002: Pavement Management, Evaluation and Rehabilitation  
File: 4494            COMP SCI 3001.002: Introduction to Data Science  
File: 4496            ELEC ENG 3001.001: Intelligent Robotics  
File: 4488            ELEC ENG 6001.006: Introduction to Nonlinear Optics  
File: 4504            HISTORY 3001.003: Slavery in the Atlantic World  
File: 4502            MECH ENG 6001.002: Fundamentals of Metal Additive Manufacturing Processes  
File: 4498            NUC ENG 2001.001: Professional Development for Nuclear Engineers

Implementation of potential graduate-level education courses through Project Lead The Way were discussed.

The proposed catalog language to be included in "The Approved List of Humanities and Social Sciences Courses for Engineering Degrees" within undergraduate engineering degree programs, was approved.

The meeting adjourned at 9:28am.

Stephen A. Raper, Chair  
Missouri S&T Campus Curricula Committee

## Course Change Request

Date Submitted: 05/05/17 2:09 pm

Viewing: **ARCH ENG 4800 5872: Principles of HVAC I**

### **Environmental Controls**

File: 942.1

Last edit: 05/16/17 9:18 am

Changes proposed by: baur

Programs referencing this course	<a href="#">ARC ENG-BS: Architectural Engineering BS</a>	In Workflow
Requested Effective Change Date	<b>Fall 2018</b> <del>08/01/2014</del>	<ol style="list-style-type: none"> <li>1. RCIVILEN Chair</li> <li>2. CCC Secretary</li> <li>3. Engineering DSCC Chair</li> <li>4. Pending CCC Agenda post</li> <li>5. CCC Meeting Agenda</li> <li>6. Campus Curricula Committee Chair</li> <li>7. FS Meeting Agenda</li> <li>8. Faculty Senate Chair</li> <li>9. Registrar</li> <li>10. Lynn Shelton</li> <li>11. Peoplesoft</li> </ol>
Department	Civil, Architectural, and Environmental Engineering	Approval Path
Discipline	Architectural Engineering (ARCH ENG)	
Course Number	<b>4800</b> <del>5872</del>	
Title	<b>Principles of HVAC I</b> <del>Environmental Controls</del>	
Abbreviated Course Title	<b>Principles of HVAC I</b> <del>Environmental Controls</del>	<ol style="list-style-type: none"> <li>1. 05/11/17 11:36 am</li> <li>2. 05/12/17 9:56 am</li> <li>3. 05/22/17 12:30 pm</li> <li>4. 06/28/17 4:03 pm</li> </ol>
Catalog Description	<p><b>Heating, ventilating, and air conditioning</b> <del>Theory and applications of principles related to the heat loss and heat gain calculations for commercial buildings. of heating, ventilating, and air conditioning equipment and systems; design problems.</del></p> <p><b>Calculations will be performed manually and using current computer software.</b></p> <p><b>Analysis and specification of the building envelope components, with an emphasis on improving energy efficiency by reducing heating and cooling loads</b> <del>Physiological and psychological factors relating to environmental control.</del></p>	<p>Joel Burken (burken): Approved for RCIVILEN Chair</p> <p>2. 05/12/17 9:56 am Brittany Parnell (ershenb): Approved for CCC Secretary</p> <p>3. 05/22/17 12:30 pm srapper: Approved for Engineering DSCC Chair</p> <p>4. 06/28/17 4:03 pm Brittany Parnell (ershenb): Approved for</p>
Prerequisites	Mech Eng <del>3521 and accompanied or preceded by Mech Eng 3525; or Mech Eng 2527</del> and Civ Eng 3330.	
Field Trip Statement		
Credit Hours	LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3	
	<b>Yes</b> <del>No</del>	

Required for Majors		Pending CCC Agenda post
Elective for Majors	No	5. 01/09/18 4:39 pm Brittany Parnell (ershenb):
Justification for change:	Approved for CCC Meeting Agenda	
The architectural engineering program is realigning the building systems courses to provide a path for a continuous design project. The realignment and renumbering of courses include environmental controls, building lighting systems and building electrical systems. When complete a student project that was initially started in architectural design will be carried through environmental controls and building lighting systems. The same project will be forwarded to building electrical systems course once complete it will have a fully designed building environmental systems in place.	6. 01/10/18 9:35 am sraper: Approved for Campus Curricula Committee Chair	
Semesters previously offered as an experimental course		
Co-Listed Courses:	<del>MECH-ENG-5571 - Environmental Controls</del>	
Course Reviewer	<b>lahne (05/05/17 11:57 am):</b> Rollback: .	
Comments	<b>sraper (05/16/17 9:18 am):</b> Changed effective date to Fall 18 and checked required for majors box. Approval subject to DC form to be submitted.	

Key: 942

[Preview Bridge](#)

## Course Change Request

Date Submitted: 05/01/17 2:42 pm

Viewing: **ARCH ENG 4820** ~~3805~~: Building Lighting Systems

File: 2069.5

Last approved: 09/21/15 3:55 am

Last edit: 10/31/17 11:26 am

Changes proposed by: baur

<p>Programs <a href="#">ARC ENG-BS: Architectural Engineering BS</a> referencing this course</p>	<p>In Workflow</p> <ol style="list-style-type: none"> <li>1. RCIVILEN Chair</li> <li>2. CCC Secretary</li> <li>3. Engineering DSCC Chair</li> <li>4. Pending CCC Agenda post</li> <li>5. CCC Meeting Agenda</li> <li>6. Campus Curricula Committee Chair</li> <li>7. FS Meeting Agenda</li> <li>8. Faculty Senate Chair</li> <li>9. Registrar</li> <li>10. Lynn Shelton</li> <li>11. Peoplesoft</li> </ol>
<p>Requested Effective Change Date: <b>Fall 2018</b> <del>Spring 2016</del></p> <p>Department: Civil, Architectural, and Environmental Engineering</p> <p>Discipline: Architectural Engineering (ARCH ENG)</p> <p>Course Number: <b>4820</b> <del>3805</del></p> <p>Title: Building Lighting Systems</p> <p>Abbreviated Course Title: Bldg Light Syst</p>	<p>Approval Path</p> <ol style="list-style-type: none"> <li>1. 05/11/17 11:36 am Joel Burken (burken): Approved for RCIVILEN Chair</li> <li>2. 05/12/17 9:57 am Brittany Parnell (ershenb): Approved for CCC Secretary</li> <li>3. 05/22/17 12:30 pm sraprer: Approved for Engineering DSCC Chair</li> <li>4. 06/28/17 4:24 pm Brittany Parnell (ershenb): Approved for Pending CCC Agenda post</li> <li>5. 01/09/18 4:41 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda</li> <li>6. 01/10/18 9:35 am sraprer: Approved for Campus</li> </ol>
<p>Catalog Description: Design and specifications for interior and exterior building illumination systems. Work includes study of applicable NFPA 70 (NEC) and related building codes.</p> <p>Prerequisites: Arch Eng <b>3804</b> <del>3803</del> and <b>Physics 2135</b> <del>Arch Eng 3804</del></p> <p>Field Trip Statement:</p> <p>Credit Hours: LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3</p> <p>Required for Majors: Yes</p> <p>Elective for Majors: No</p>	
<p>Justification for change: The architectural engineering program is realigning the building systems courses to provide a path for a continuous design project. The realignment and renumbering of courses include environmental controls, building lighting systems and building electrical systems. When complete a student project that was initially started in architectural design will be carried through environmental controls and building lighting systems. The same project will be forwarded to building electrical systems course once complete it will have a fully designed building environmental systems in place.</p> <p>Semesters previously offered as an experimental course: ArchE 3805 typically has an enrollment of 40 students. Student enrollment numbers are expected to be similar.</p> <p>Co-Listed Courses:</p>	

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Course Reviewer <b>sraper (05/16/17 9:20 am)</b> : Changed effective date to Fall 2018. Approval subject to Comments DC form submission.	Curricula Committee Chair
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Key: 2069

**History**

1. Sep 21, 2015 by baur (2069.1)

[Preview Bridge](#)

## Course Change Request

Date Submitted: 05/01/17 2:34 pm

Viewing: **ARCH ENG 4850 ~~3803~~: Building Electrical Systems**

File: 4219.5

Last approved: 09/21/15 3:55 am

Last edit: 10/31/17 11:27 am

Changes proposed by: baur

<p>Programs <a href="#">ARC ENG-BS: Architectural Engineering BS</a></p> <p>referencing this course</p>		<p>In Workflow</p> <ol style="list-style-type: none"> <li>1. RCIVILEN Chair</li> <li>2. CCC Secretary</li> <li>3. Engineering DSCC Chair</li> <li>4. Pending CCC Agenda post</li> <li>5. CCC Meeting Agenda</li> <li>6. Campus Curricula Committee Chair</li> <li>7. FS Meeting Agenda</li> <li>8. Faculty Senate Chair</li> <li>9. Registrar</li> <li>10. Lynn Shelton</li> <li>11. Peoplesoft</li> </ol>
<p>Requested Effective Change Date</p> <p>Department</p> <p>Discipline</p> <p>Course Number</p> <p>Title</p> <p>Abbreviated Course Title</p>	<p><b>Fall 2018</b> <del>Spring 2016</del></p> <p>Civil, Architectural, and Environmental Engineering</p> <p>Architectural Engineering (ARCH ENG)</p> <p><b>4850</b> <del>3803</del></p> <p>Building Electrical Systems</p> <p>Bldg Elect Syst</p>	<p>Approval Path</p> <ol style="list-style-type: none"> <li>1. 05/11/17 11:36 am</li> <li>2. 05/12/17 9:58 am</li> <li>3. 05/22/17 12:30 pm</li> <li>4. 06/28/17 4:25 pm</li> <li>5. 01/09/18 4:41 pm</li> <li>6. 01/10/18 9:35 am</li> </ol>
<p>Catalog Description</p> <p>Prerequisites</p> <p>Field Trip Statement</p> <p>Credit Hours</p> <p>Required for Majors</p> <p>Elective for Majors</p>	<p>The design of interior and exterior building electrical systems, including power loads, branch circuits and switching. Work includes study of applicable NFPA 70 (NEC) and related building codes.</p> <p><b>Arch Eng 4800 and Arch Eng 4820</b> <del>Math 3304 and Physics 2135.</del></p> <p>LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3</p> <p>Yes</p> <p>No</p>	<p>Joel Burken (burken): Approved for RCIVILEN Chair</p> <p>Brittany Parnell (ershenb): Approved for CCC Secretary</p> <p>sraper: Approved for Engineering DSCC Chair</p>
<p>Justification for change:</p> <p>Semesters previously offered as an experimental course</p>	<p>The architectural engineering program is realigning the building systems courses to provide a path for a continuous design project. The realignment and renumbering of courses include environmental controls, building lighting systems and building electrical systems. When complete a student project that was initially started in architectural design will be carried through environmental controls and building lighting systems. The same project will be forwarded to building electrical systems course once complete it will have a fully designed building environmental systems in place.</p> <p>This <del>will be the new pre-requisite for ArchE 3805, which</del> typically has an enrollment of 40 students. <del>As the pre-requisite for ArchE 3805, student enrollment numbers are expected to be similar.</del></p>	<p>Approved for Pending CCC Agenda post</p> <p>Brittany Parnell (ershenb): Approved for CCC Meeting Agenda</p> <p>sraper: Approved for Campus</p>

Co-Listed Courses:	Curricula Committee Chair
Course Reviewer <b>sraper (05/16/17 9:21 am)</b> : Changed effective date to Fall 2018. Approval subject to Comments DC form submission.	History
<small>Key: 4219</small>	1. Sep 21, 2015 by— Stuart Baur (baur)  <a href="#">Preview Bridge</a>



## Course Change Request

Date Submitted: 10/20/17 1:38 pm

Viewing: **BIO SCI 2263 : Ecology**

File: 2151.1

Last edit: 01/09/18 3:21 pm

Changes proposed by: shannonk

<p>Programs referencing this course</p> <p><a href="#">BIO SC-BA: Biological Sciences BA</a>  <a href="#">BIO SC-BS: Biological Sciences BS</a>  <a href="#">ECON-BS: Economics BS</a>  <a href="#">EV ENG-BS: Environmental Engineering BS</a>  <a href="#">GEOL-MI: Geology Minor</a>  <a href="#">SCTCPL-MI: Science, Tech, &amp; Politics Minor</a>  <a href="#">TCH COM-BS: Technical Communication BS</a></p> <p>Other Courses referencing this course</p> <p>In The Prerequisites:  <a href="#">BIO SCI 4363 : Freshwater Ecology</a>  <a href="#">BIO SCI 5423 : Advanced Biodiversity</a>  <a href="#">BIO SCI 5463 : Global Ecology</a></p>	<p>In Workflow</p> <ol style="list-style-type: none"> <li>1. <b>RBIOLSCI Chair</b></li> <li>2. <b>CCC Secretary</b></li> <li>3. <b>Sciences DSCC Chair</b></li> <li>4. <b>Pending CCC Agenda post</b></li> <li>5. <b>CCC Meeting Agenda</b></li> <li>6. <b>Campus Curricula Committee Chair</b></li> <li>7. <b>FS Meeting Agenda</b></li> <li>8. Faculty Senate Chair</li> <li>9. Registrar</li> <li>10. CAT entry</li> <li>11. Peoplesoft</li> </ol>
<p>Requested Effective Change Date</p> <p><b>Fall 2018</b> <del>08/01/2014</del></p> <p>Department: Biological Sciences</p> <p>Discipline: Biological Sciences (BIO SCI)</p> <p>Course Number: 2263</p> <p>Title: Ecology</p> <p>Abbreviated Course Title: Ecology</p>	<p>Approval Path</p> <ol style="list-style-type: none"> <li>1. 10/20/17 1:45 pm David Duvernell (duverneld): Approved for RBIOLSCI Chair</li> <li>2. 10/23/17 10:27 am Brittany Parnell (ershenb): Approved for CCC Secretary</li> <li>3. 11/17/17 12:17 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair</li> <li>4. 11/21/17 3:25 pm Brittany Parnell (ershenb): Approved for Pending CCC Agenda post</li> <li>5. 01/09/18 2:09 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda</li> </ol>
<p>Catalog Description</p> <p>Relationships between organisms and the environment. Topics include the influence of environmental factors on individual organisms, population dynamics, interspecific associations, and entire ecosystems.</p> <p>Prerequisites</p> <p>Bio Sci 1113 or Bio Sci <b>1213</b> or Bio Sci <b>1223</b>. <del>1213</del>.</p> <p>Field Trip Statement</p> <p>Credit Hours</p> <p>LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3</p> <p>Required for Majors</p> <p>No</p> <p>Elective for Majors</p> <p><b>Yes</b> <del>No</del></p>	
<p>Justification for change:</p> <p>We are adding Biodiversity as an acceptable prerequisite for this course</p> <p>Semesters previously offered as an experimental course</p>	

Co-Listed

Courses:

6. 01/10/18 9:36 am  
sraper: Approved  
for Campus  
Curricula  
Committee Chair

Course Reviewer **ershenb (01/09/18 2:08 pm)**: checked "Yes" for majors

Comments

Key: 2151

[Preview Bridge](#)

## Course Change Request

Date Submitted: 10/20/17 1:41 pm

Viewing: **BIO SCI 2383 : Plant Biology**

File: 1513.1

Last edit: 10/20/17 1:41 pm

Changes proposed by: shannonk

<p>Other Courses referencing this course</p> <p>In The Catalog Description: <a href="#">BIO SCI 2389 : Plant Biology Laboratory</a></p> <p>In The Prerequisites: <a href="#">BIO SCI 2389 : Plant Biology Laboratory</a></p>	<p>In Workflow</p> <ol style="list-style-type: none"> <li>1. <b>RBIOLSCI Chair</b></li> <li>2. <b>CCC Secretary</b></li> <li>3. <b>Sciences DSCC Chair</b></li> <li>4. <b>Pending CCC Agenda post</b></li> <li>5. <b>CCC Meeting Agenda</b></li> <li>6. <b>Campus Curricula Committee Chair</b></li> <li>7. <b>FS Meeting Agenda</b></li> <li>8. Faculty Senate Chair</li> <li>9. Registrar</li> <li>10. CAT entry</li> <li>11. Peoplesoft</li> </ol>
<p>Requested Effective Change Date</p> <p>Department</p> <p>Discipline</p> <p>Course Number</p> <p>Title</p> <p>Abbreviated Course Title</p>	<p><b>Fall 2018</b> <del>08/01/2014</del></p> <p>Biological Sciences</p> <p>Biological Sciences (BIO SCI)</p> <p>2383</p> <p>Plant Biology</p> <p>Plant Biology</p>
<p>Catalog Description</p> <p>Prerequisites</p> <p>Field Trip Statement</p> <p>Credit Hours</p> <p>Required for Majors</p> <p>Elective for Majors</p>	<p>An intermediate class covering plant form and function. Topics include the cellular structures unique to plants, their life cycles, and the mechanisms they use to survive, reproduce, and convert solar energy into a form usable by all other organisms.</p> <p>Bio Sci 1113 or Bio Sci <b>1213</b> or Bio Sci <b>1223</b>. <del>1213</del>.</p> <p></p> <p>LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3</p> <p>No</p> <p><b>Yes</b> <del>No</del></p>
<p>Justification for change:</p> <p>Semesters previously offered as an experimental course</p> <p>Co-Listed Courses:</p>	<p>Approval Path</p> <ol style="list-style-type: none"> <li>1. 10/20/17 1:44 pm David Duvernell (duvernell): Approved for RBIOLSCI Chair</li> <li>2. 10/23/17 10:28 am Brittany Parnell (ershenb): Approved for CCC Secretary</li> <li>3. 11/17/17 12:18 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair</li> <li>4. 11/21/17 3:25 pm Brittany Parnell (ershenb): Approved for Pending CCC Agenda post</li> <li>5. 01/09/18 2:14 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda</li> </ol>
<p>Course Reviewer Comments</p>	<p></p>

Key: 1513

6. 01/10/18 9:36 am  
craper: Approved  
for Campus  
Curricula  
Committee Chair

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## Course Change Request

Date Submitted: 10/20/17 1:37 pm

Viewing: **BIO SCI 3233** ~~2233~~: Evolution

File: 2531.1

Last edit: 01/09/18 3:26 pm

Changes proposed by: shannonk

Requested **Fall 2018** ~~08/01/2014~~  
 Effective Change  
 Date  
 Department Biological Sciences  
 Discipline Biological Sciences (BIO SCI)  
 Course Number **3233** ~~2233~~  
 Title Evolution  
 Abbreviated Evolution  
 Course Title

Catalog Description A survey of the genetic and environmental mechanisms associated with organic evolution.  
 Prerequisites **Bio Sci 2223.**  
 Field Trip Statement  
 Credit Hours LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3  
 Required for Majors No  
 Elective for Majors **Yes** ~~No~~

Justification for change: We are adding a Genetics prerequisite because it is important for students to understand mutations before they learn evolution. We are making this course 3000 level since it now requires a 2000 level prereq. Historically this course was offered at an introductory level, without prerequisites, to provide a survey of evolutionary theory for majors and non-majors students. Most students who actually take the course are biology majors. Going forward, we wish for this course to provide a synthesis of biological principles after students (primarily biology majors) have completed more introductory biology courses. For this reason, we wish to add the prerequisite of general genetics.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer **ershenb (01/09/18 3:13 pm)**: checked "yes" for Required for Majors and removed Comments "General Genetics" from the Prerequisite.  
**ershenb (01/09/18 3:26 pm)**: \*correction- checked "Yes" for Elective for Majors

### In Workflow

1. **RBIOLSCI Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. CAT entry
11. Peoplesoft

### Approval Path

1. 10/20/17 1:44 pm David Duvernell (duverneld): Approved for RBIOLSCI Chair
2. 10/23/17 10:31 am Brittany Parnell (ershenb): Approved for CCC Secretary
3. 11/17/17 12:18 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 11/21/17 3:25 pm Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. 01/09/18 3:13 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda

Key: 2531

6. 01/10/18 9:37 am  
scraper: Approved  
for Campus  
Curricula  
Committee Chair

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## Course Change Request

Date Submitted: 10/20/17 1:39 pm

Viewing: **BIO SCI 3313 : Microbiology**

File: 1843.1

Last edit: 01/09/18 3:29 pm

Changes proposed by: shannonk

<p>Programs referencing this course</p> <p>Other Courses referencing this course</p>	<p><u><a href="#">BIOMED-MI: Biomedical Engineering Minor</a></u></p> <p>In The Prerequisites:</p> <p><u><a href="#">BIO SCI 3319 : Microbiology Lab</a></u></p> <p><u><a href="#">BIO SCI 4313 : Introduction to Environmental Microbiology</a></u></p> <p><u><a href="#">BIO SCI 6513 : Advanced Microbial Metabolism</a></u></p>	<p>In Workflow</p> <ol style="list-style-type: none"> <li>1. <b>RBIOLSCI Chair</b></li> <li>2. <b>CCC Secretary</b></li> <li>3. <b>Sciences DSCC Chair</b></li> <li>4. <b>Pending CCC Agenda post</b></li> <li>5. <b>CCC Meeting Agenda</b></li> <li>6. <b>Campus Curricula Committee Chair</b></li> <li>7. <b>FS Meeting Agenda</b></li> <li>8. Faculty Senate Chair</li> <li>9. Registrar</li> <li>10. CAT entry</li> <li>11. Peoplesoft</li> </ol>
<p>Requested Effective Change Date</p> <p>Department</p> <p>Discipline</p> <p>Course Number</p> <p>Title</p> <p>Abbreviated Course Title</p>	<p><b>Fall 2018</b> <del>08/01/2014</del></p> <p>Biological Sciences</p> <p>Biological Sciences (BIO SCI)</p> <p>3313</p> <p>Microbiology</p> <p>Microbiology</p>	<p>Approval Path</p> <ol style="list-style-type: none"> <li>1. 10/20/17 1:44 pm David Duvernell (duverneld): Approved for RBIOLSCI Chair</li> <li>2. 10/23/17 10:32 am Brittany Parnell (ershenb): Approved for CCC Secretary</li> <li>3. 11/17/17 12:18 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair</li> <li>4. 11/21/17 3:25 pm Brittany Parnell (ershenb): Approved for Pending CCC Agenda post</li> <li>5. 01/09/18 3:29 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda</li> </ol>
<p>Catalog Description</p> <p>Prerequisites</p> <p>Field Trip Statement</p> <p>Credit Hours</p> <p>Required for Majors</p> <p>Elective for Majors</p>	<p>General introduction to the culture and study of microorganisms, their physiology, structure, and contribution to biology.</p> <p><b>Chem 1320 and Bio Sci 2213.</b> <del>Chem 1320.</del></p> <p>LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3</p> <p>No</p> <p><b>Yes</b> <del>No</del></p>	
<p>Justification for change:</p> <p>Semesters previously offered as an experimental course</p> <p>Co-Listed Courses:</p>	<p>We are adding Cell Biology Bio Sci 2213 as a prerequisite for this 3000 level course</p>	
<p><b>ershenb (01/09/18 3:29 pm):</b> checked "Yes" Elective for Majors.</p>		

Course Reviewer  
Comments

Key: 1843

6. 01/10/18 9:37 am  
sraper: Approved  
for Campus  
Curricula  
Committee Chair

[Preview Bridge](#)



## Course Change Request

## New Course Proposal

Date Submitted: 11/28/17 6:20 am

Viewing: **CHEM ENG 6180 : Advanced Applications of Computational Fluid Dynamics**

File: 4501

Last edit: 01/09/18 3:31 pm

Changes proposed by: smithjose

Requested	Fall 2018
Effective Change Date	
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	6180
Title	Advanced Applications of Computational Fluid Dynamics
Abbreviated Course Title	Advanced CFD Application

Catalog Description: Advanced applications of CFD analyses is presented to investigate mass, momentum and heat transport in complex geometries with general initial and boundary conditions. Students will gain practical experience using commercial CFD codes and learn and apply a general algorithm for solving challenging industrial problems using tutorials.

Prerequisites: Chem Eng 4150 and Chem Eng 5100.

Field Trip Statement

Credit Hours: LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3

Required for Majors: No

Elective for Majors: Yes

Justification for new course: This course has been taught the last three years in Chemical Engineering as an experimental course which students from Chemical Engineering, Nuclear Engineering and Petroleum Engineering have taken. CFD is commonly used by engineers to solve difficult industrial problems and is routinely used by academic researchers to understand complex transport processes involving heat, mass and momentum transfer. This course teaches an algorithmic approach to setting up and solving CFD problems using commercial software packages commonly used in industry and academia that will better prepare them for future success in their chosen career.

Semesters previously offered as an experimental course: Enrollment: Spring 2015- 14, Spring 2016- 16, Spring 2017- 6

In Workflow

1. RCHEMENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. CAT entry
11. Peoplesoft

Approval Path

1. 11/28/17 5:30 pm Muthanna Al-Dahhan (aldahhanm): Approved for RCHEMENG Chair
2. 11/29/17 11:38 am Brittany Parnell (ershenb): Approved for CCC Secretary
3. 12/04/17 1:34 pm sraper: Approved for Engineering DSCC Chair
4. 12/07/17 9:18 am Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. 01/09/18 3:31 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. 01/10/18 9:36 am sraper: Approved for Campus

Co-Listed

Courses:

Curricula

Committee Chair

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Course Reviewer **sraper (12/04/17 1:33 pm)**: checked "elective for majors"

Comments **sraper (12/04/17 1:34 pm)**: simplified prereqs.

**ershenb (01/09/18 3:31 pm)**: switched "5100" and "4150" in Prerequisites so they will be listed in ascending order.

Key: 4501

[Preview Bridge](#)

## Course Change Request

Date Submitted: 09/18/17 11:15 am

Viewing: **CIV ENG 5515 : Advanced Traffic ~~Signal~~ Operations and Capacity Analysis**

File: 4070.7

Last approved: 09/22/14 4:14 am

Last edit: 01/09/18 3:36 pm

Changes proposed by: seelyj

Requested	<b>Fall 2018</b> <del>08/01/2014</del>
Effective Change Date	
Department	Civil, Architectural, and Environmental Engineering
Discipline	Civil Engineering (CIV ENG)
Course Number	5515
Title	Advanced Traffic <del>Signal</del> Operations <b>and Capacity Analysis</b>
Abbreviated Course Title	Adv <del>Traf Traffic Signal</del> Ops & <b>CA Anlys</b>

In Workflow

1. **RCIVILEN Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. CAT entry
11. Peoplesoft

Catalog

Description

This course will **introduce students to advanced traffic operation** ~~discuss the role~~ and **capacity analysis as applied to an urban highway network.** ~~function of traffic signal components: the signal controller, conflict monitor, vehicle detectors, etc.~~ **It will focus on** ~~The course also covers~~ **the operations and management layout of freeway and arterials where a signalized** ~~traffic signal hardware at an~~ **intersection is one of** ~~and will discuss~~ **the key elements affecting traffic flow operation and determining highway capacity.** ~~phasing/timing of traffic signals in detail.~~

Prerequisites

**Civ Eng** ~~CIV-ENG~~-5513.

Field Trip

Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
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Required for Majors	No
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Elective for Majors	Yes
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Approval Path

1. 10/03/17 5:04 am  
Joel Burken (burken):  
Approved for RCIVILEN Chair
2. 10/04/17 11:37 am  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
3. 11/21/17 9:55 am  
srafer: Approved for Engineering DSCC Chair
4. 11/21/17 3:26 pm  
Brittany Parnell (ershenb):  
Approved for Pending CCC Agenda post

Justification for  
change:

New faculty would like to update the information for this course.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer  
Comments

**sraper (11/21/17 9:55 am):** edits to course description as suggested by DSCC members.

**ershenb (01/09/18 3:36 pm):** Changed effective date to Fall 2018 and removed "s" from "introduces" in Catalog Description.

5. 01/09/18 3:36 pm  
Brittany Parnell  
(ershenb):  
Approved for CCC  
Meeting Agenda
6. 01/10/18 9:37 am  
sraper: Approved  
for Campus  
Curricula  
Committee Chair

#### History

1. Sep 22, 2014 by  
Debbie Benenati  
(dbenenat)

Key: 4070

[Preview Bridge](#)

## Course Change Request

## New Course Proposal

Date Submitted: 09/11/17 10:06 pm

Viewing: **CIV ENG 5635 : Phytoremediation and Natural Treatment Systems: Science and Design**

File: 4479

Last edit: 01/09/18 3:40 pm

Changes proposed by: burken

Requested	Fall 2018
Effective Change Date	
Department	Civil, Architectural, and Environmental Engineering
Discipline	Civil Engineering (CIV ENG)
Course Number	5635
Title	Phytoremediation and Natural Treatment Systems: Science and Design
Abbreviated Course Title	Phytoremediation
Catalog Description	Students learn the scientific basics of chemical transport in soil and groundwater and learn fundamental plant physiology and processes. Students then learn how these processes are utilized in design of phytoremediation and natural treatment systems, including the most up to date literature and design guidance available.
Prerequisites	Civ Eng 3615 or Env Eng 3615.
Field Trip Statement	
Credit Hours	LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3
Required for Majors	No
Elective for Majors	Yes
Justification for new course:	Just a colist of EnvEng 5635
Semesters previously offered as an experimental course	existing course at 5635 Civ Eng 5001: Phytoremediation - Fall 2015 enrollment: 4, Spring 17 enrollment 1
Co-Listed Courses:	ENV ENG 5635 - Phytoremediation and Natural Treatment Systems: Science and Design
Course Reviewer Comments	<b>ershenb (10/09/17 8:50 am)</b> : Rollback: Clarification needed for Env Eng 5615 <b>ershenb (11/09/17 10:37 am)</b> : Per the request of Dr. Burken, added ENV ENG 5635 as the co-list. <b>srapr (11/13/17 9:58 am)</b> : Corrected misspelled abbreviated course title. <b>ershenb (01/09/18 3:40 pm)</b> : Switched and listed "Civ Eng 3615" as the first prerequisite (alphabetical).

In Workflow

1. RCIVILEN Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. CAT entry
11. Peoplesoft

Approval Path

1. 10/03/17 5:04 am  
Joel Burken (burken):  
Approved for RCIVILEN Chair
2. 10/09/17 8:50 am  
Brittany Parnell (ershenb):  
Rollback to RCIVILEN Chair for CCC Secretary
3. 11/08/17 9:48 pm  
Joel Burken (burken):  
Approved for RCIVILEN Chair
4. 11/09/17 10:38 am  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
5. 11/21/17 9:55 am  
srapr: Approved for Engineering DSCC Chair
6. 11/21/17 3:26 pm  
Brittany Parnell (ershenb):  
Approved for

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Key: 4479

- Pending CCC  
Agenda post
- 7. 01/09/18 3:40 pm  
Brittany Parnell  
(ershenb):  
Approved for CCC  
Meeting Agenda
- 8. 01/10/18 9:37 am  
sraper: Approved  
for Campus  
Curricula  
Committee Chair

[Preview Bridge](#)

## Course Change Request

Date Submitted: 11/08/17 12:11 pm

Viewing: **COMP SCI 1200 : Discrete Mathematics for For Computer Science**

File: 110.2

Last approved: 04/28/14 4:00 am

Last edit: 11/21/17 2:35 pm

Changes proposed by: tauritzd

<p>Programs referencing this course</p> <p>Other Courses referencing this course</p>	<p><a href="#">AP MATH-BS: Applied Mathematics BS</a></p> <p><a href="#">CMP SC-BS: Computer Science BS</a></p> <p><a href="#">CP ENG-BS: Computer Engineering BS</a></p> <p>In The Prerequisites:</p> <p><a href="#">COMP SCI 2200 : Theory of Computer Science</a></p> <p><a href="#">COMP SCI 2500 : Algorithms</a></p> <p><a href="#">COMP SCI 2889 : Introduction To Computer Organization And Assembly</a></p> <p><a href="#">COMP SCI 3800 : Introduction To Operating Systems</a></p> <p><a href="#">COMP SCI 5300 : Database Systems</a></p> <p><a href="#">MATH 5107 : Combinatorics And Graph Theory</a></p> <p><a href="#">PHILOS 3254 : Symbolic Logic in Argumentation</a></p>	<p>In Workflow</p> <ol style="list-style-type: none"> <li>1. RCOMPSCI Chair</li> <li>2. CCC Secretary</li> <li>3. Engineering DSCC Chair</li> <li>4. Pending CCC Agenda post</li> <li>5. CCC Meeting Agenda</li> <li>6. Campus Curricula Committee Chair</li> <li>7. FS Meeting Agenda</li> <li>8. Faculty Senate Chair</li> <li>9. Registrar</li> <li>10. CAT entry</li> <li>11. Peoplesoft</li> </ol>
<p>Requested Effective Change Date</p> <p>Department</p> <p>Discipline</p> <p>Course Number</p> <p>Title</p> <p>Abbreviated Course Title</p>	<p><b>Fall 2018</b> <del>01/13/2015</del></p> <p>Computer Science</p> <p>Computer Science (COMP SCI)</p> <p>1200</p> <p>Discrete Mathematics <b>for For</b>-Computer Science</p> <p>Discrete Math For Cmp Sc</p>	<p>Approval Path</p> <ol style="list-style-type: none"> <li>1. 11/08/17 5:37 pm George Markowsky (markowskyg): Approved for RCOMPSCI Chair</li> <li>2. 11/09/17 9:33 am Brittany Parnell (ershenb): Approved for CCC Secretary</li> <li>3. 11/21/17 9:55 am sraper: Approved for Engineering DSCC Chair</li> <li>4. 11/21/17 3:26 pm Brittany Parnell (ershenb): Approved for Pending CCC Agenda post</li> <li>5. 01/09/18 3:42 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda</li> <li>6. 01/10/18 9:37 am sraper: Approved for Campus</li> </ol>
<p>Catalog Description</p> <p>Prerequisites</p> <p>Field Trip Statement</p> <p>Credit Hours</p> <p>Required for Majors</p> <p>Elective for Majors</p>	<p>A rigorous treatment of topics from discrete mathematics which are essential to computer science. Principal topics include: formal logic (propositional &amp; predicate), proof techniques, mathematical induction, program correctness, sets, combinatorics, probability, relations, functions, matrices, graph theory and graph algorithms.</p> <p>A <b>grade of "C"</b> or better <del>grade</del> in <b>both</b> Comp Sci <b>1570</b> and <b>one of Math 1120, Math 1140, Math 1208, and Math 1214.</b> <del>1570.</del></p> <p>LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3</p> <p>Yes</p> <p>No</p>	
<p>Justification for change:</p>	<p>Lack of algebra skills and mathematical maturity is impeding student success in this course. The added math prereq addresses this impediment.</p>	

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Curricula  
Committee Chair

History

1. Apr 28, 2014 by  
lahne (110.1)

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Course Reviewer  
Comments

Key: 110

[Preview Bridge](#)



## Course Change Request

Date Submitted: 12/12/17 5:26 pm

Viewing: **ECON 6440 5440: Advanced Environmental and And-Natural Resource Economics**

File: 774.1

Last edit: 12/15/17 3:11 pm

Changes proposed by: marcys

Requested	<b>Fall 2018</b> <del>08/01/2014</del>
Effective Change Date	
Department	Economics
Discipline	Economics (ECON)
Course Number	<b>6440 5440</b>
Title	Advanced Environmental <del>and And</del> -Natural Resource Economics
Abbreviated Course Title	Adv <b>Env and Nat Res</b> <del>Env&amp;Nat Resource-Eco</del>

Catalog Description	<del>Optimum use of replenishable and non-replenishable resources, public goods and common resources, externalities, private vs. public costs, and non-renewable resources, public goods and common resources, externalities, and quality of the environment; emphasis on public policy related to environmental and natural resource economics. As This course is an advanced version of Econ 4440, it and will include additional research and project assignments. Credit can't cannot be earned obtained for both Econ 4440 and 6440. Econ 5440.</del> <b>Optimum use of renewable public costs, and non-renewable resources, public goods and common resources, externalities, and quality of the environment; emphasis on public policy related to environmental and natural resource economics. As This course is an advanced version of Econ 4440, it and will include additional research and project assignments. Credit can't cannot be earned obtained for both Econ 4440 and 6440. Econ 5440.</b>				
Prerequisites	Econ 2100.				
Field Trip Statement					
Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	<b>No</b>				
Elective for Majors	<b>No</b>				

Justification for change:	This is a graduate level course and should have a 6000 graduate level number.
Semesters previously offered as an experimental course	
Co-Listed Courses:	

Course Reviewer Comments	<b>ershenb (12/13/17 9:52 am):</b> updated effective date to Fall 2018
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In Workflow

1. RECONOMI Chair
2. CCC Secretary
3. Social Sciences DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. CAT entry
11. Peoplesoft

Approval Path

1. 12/13/17 9:13 am  
Gregory Gelles (gelles):  
Approved for RECONOMI Chair
2. 12/13/17 9:52 am  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
3. 12/15/17 2:59 pm  
Barry Flachsbart (barryf):  
Approved for Social Sciences DSCC Chair
4. 12/15/17 3:07 pm  
Brittany Parnell (ershenb):  
Approved for Pending CCC Agenda post
5. 01/09/18 3:52 pm  
Brittany Parnell (ershenb):  
Approved for CCC Meeting Agenda
6. 01/10/18 9:38 am  
sraprer: Approved for Campus

Key: 774

Curricula  
Committee Chair

[Preview Bridge](#)

## Course Change Request

Date Submitted: 12/13/17 9:05 am

Viewing: **ECON 6540 5540: Advanced Energy Economics**

File: 1737.1

Last edit: 12/13/17 10:05 am

Changes proposed by: marcys

Requested	<b>Fall 2018</b> <del>08/01/2014</del>
Effective Change Date	
Department	Economics
Discipline	Economics (ECON)
Course Number	<b>6540 5540</b>
Title	Advanced Energy Economics
Abbreviated Course Title	Adv Energy Economics

### Catalog

#### Description

Market structures. World resource development. Supply and demand analysis on energy production and consumption within domestic and global settings. This course is an advanced version of Econ **4540, 345**, and will include additional research and project assignments. Credit cannot be obtained for both Econ **4540 345** and Econ **6540. 445**.

#### Prerequisites

Econ **2100. 221**.

#### Field Trip

#### Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
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Required for Majors **No**

Elective for Majors **No**

#### Justification for change:

This is a graduate level course and should have a 6000 graduate level number.

Semesters previously

### In Workflow

- RECONOMI Chair**
- CCC Secretary**
- Social Sciences DSCC Chair**
- Pending CCC Agenda post**
- CCC Meeting Agenda**
- Campus Curricula Committee Chair**
- FS Meeting Agenda**
- Faculty Senate Chair
- Registrar
- CAT entry
- Peoplesoft

### Approval Path

- 12/13/17 9:14 am  
Gregory Gelles (gelles):  
Approved for RECONOMI Chair
- 12/13/17 10:05 am  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
- 12/15/17 3:00 pm  
Barry Flachsbart (barryf):  
Approved for Social Sciences DSCC Chair
- 12/15/17 3:12 pm  
Brittany Parnell (ershenb):  
Approved for

<p>offered as an experimental course</p> <p>Co-Listed Courses:</p>	<p>Pending CCC Agenda post</p> <p>5. 01/09/18 3:53 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda</p>
<p>Course Reviewer Comments</p> <p><b>ershenb (12/13/17 10:05 am):</b> updated effective date to Fall 2018</p>	<p>6. 01/10/18 9:38 am sraper: Approved for Campus Curricula Committee Chair</p>

Key: 1737

[Preview Bridge](#)

## Course Change Request

### New Course Proposal

Date Submitted: 11/30/17 7:50 am

Viewing: **FINANCE 5310 : Financial Modeling**

File: 4499

Last edit: 12/05/17 12:11 pm

Changes proposed by: barryf

Requested	Fall 2018
Effective Change Date	
Department	Business and Information Technology
Discipline	Finance (FINANCE)
Course Number	5310
Title	Financial Modeling
Abbreviated Course Title	Financial Modeling

**Catalog Description**  
This course is built on finance theory, financial analysis, and quantitative methods from prerequisite courses. The course will extensively use Excel spreadsheets to design and construct integrated financial models. The objective is to offer students opportunities to experience hands-on numerical analyses, company valuation, and dynamic projections.

**Prerequisites**  
Finance 2150 or Graduate Standing.

**Field Trip Statement**

**Credit Hours**  
LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3

**Required for Majors**  
No

**Elective for Majors**  
Yes

**Justification for new course:**  
In today's technology-driven market, computer skills play a key role in a student's career success. In most finance courses, students are introduced to fundamental finance theories. Financial modeling is a course that bridges the gap between textbook learning and digitalized practice. The course will prepare students to design and implement realistic forecasting models using Excel spreadsheet functions.  
The proposed course will be a dual listed course for both undergraduate and graduate students. It will be the first computer-based finance class that takes students step-by-step through financial models that are closely related to other undergraduate and graduate finance courses. The course provides the technology component to the existing paper-based finance courses. This new course diversifies the department course offering and provides students with a more broad exposure in the subject of finance. It will complement the department mission with the technological emphasis.  
Part of the Minor in Financial Technology.

In Workflow

1. **RBUSADMN Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. CAT entry
11. Peoplesoft

Approval Path

1. 11/30/17 7:28 pm  
siau: Approved for RBUSADMN Chair
2. 12/04/17 3:31 pm  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. 12/05/17 12:10 pm  
Brittany Parnell (ershenb): Approved for Social Sciences DSCC Chair
4. 12/07/17 9:23 am  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. 01/09/18 3:54 pm  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. 01/10/18 9:38 am  
srapr: Approved

Semesters  
previously  
offered as an  
experimental  
course

for Campus  
Curricula  
Committee Chair

Co-Listed  
Courses:

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Course Reviewer **ershenb (12/05/17 12:11 pm)**: Approved the course form per the request of Dr.  
Comments Flachsbart (technical issues).

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Key: 4499

[Preview Bridge](#)

## Course Change Request

Date Submitted: 12/13/17 1:45 pm

Viewing: **IS&T 4335 : Fundamentals of Mobile Technology for Business**

File: 2391.6

Last approved: 06/30/14 3:55 am

Last edit: 01/09/18 4:00 pm

Changes proposed by: barryf

Programs referencing this course	<a href="#">CYBERMG-MI: Cybersecurity Management and Information Assurance Minor</a> <a href="#">E&amp;S COM-MI: Elect &amp; Social Commerce Minor</a> <a href="#">ENTPRNS-MI: Entrepreneurship Minor</a> <a href="#">MOBLB&amp;T-MI: Mobile Bus &amp; Tech Minor</a>	In Workflow <b>1. RINFSCTE Chair</b> <b>2. CCC Secretary</b> <b>3. Social Sciences DSCC Chair</b> <b>4. Pending CCC Agenda post</b> <b>5. CCC Meeting Agenda</b> <b>6. Campus Curricula Committee Chair</b> <b>7. FS Meeting Agenda</b>
Requested Effective Change Date	<b>Fall 2018</b> <del>08/01/2014</del>	8. Faculty Senate Chair
Department	Business and Information Technology	9. Registrar
Discipline	Info Science & Technology (IS&T)	10. CAT entry
Course Number	4335	11. Peoplesoft
Title	Fundamentals of Mobile Technology for Business	Approval Path
Abbreviated Course Title	Fund MobileTech for Bus	1. 12/13/17 10:20 pm siau: Approved
Catalog Description	A broad overview of mobile technology use in business environments. Topics include the mobile industry; mobile network and wireless standards; mobile devices; mobile web design and app development; social and user experience issues; mobile marketing and commerce.	for RINFSCTE Chair
Prerequisites	<b>Junior standing or above.</b> <del>IS&amp;T 3333.</del>	2. 12/14/17 9:30 am Brittany Parnell (ershenb): Approved for CCC Secretary
Field Trip Statement		3. 12/15/17 3:00 pm Barry Flachsbart (barryf): Approved for Social Sciences DSCC Chair
Credit Hours	LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3	4. 12/15/17 3:26 pm Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
Required for Majors	<b>Yes</b> <del>No</del>	5. 01/09/18 4:00 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
Elective for Majors	No	6. 01/10/18 9:39 am srapr: Approved for Campus
Justification for change:	Instructor has changed course slightly and prerequisite is no longer needed.	
Semesters previously offered as an experimental course		
Co-Listed Courses:		

Course Reviewer **ershenb (01/09/18 4:00 pm)**: added "Junior standing or above" to Prerequisite and  
Comments checked "yes" for majors.

Curricula  
Committee Chair

Key: 2391

**History**

1. Apr 28, 2014 by  
barryf (2391.1)
2. Jun 30, 2014 by  
lahne (2391.5)

[Preview Bridge](#)



## Course Change Request

Date Submitted: 12/13/17 1:45 pm

Viewing: **IS&T 6335 : Mobile Technology for Business**

File: 1871.6

Last approved: 06/30/14 3:55 am

Last edit: 12/14/17 4:30 pm

Changes proposed by: barryf

Catalog Pages referencing this course	<a href="#">Business Administration</a> <a href="#">Information Science and Technology</a>	In Workflow 1. RINFSCTE Chair 2. CCC Secretary 3. Social Sciences DSCC Chair 4. Pending CCC Agenda post 5. CCC Meeting Agenda 6. Campus Curricula Committee Chair 7. FS Meeting Agenda 8. Faculty Senate Chair 9. Registrar 10. CAT entry 11. Peoplesoft
Requested Effective Change Date	Fall 2018 <del>08/01/2014</del>	
Department	Business and Information Technology	
Discipline	Info Science & Technology (IS&T)	
Course Number	6335	
Title	Mobile Technology for Business	
Abbreviated Course Title	<b>Mobile Tech for Business</b>	Approval Path 1. 12/13/17 10:20 pm siauk: Approved for RINFSCTE Chair 2. 12/14/17 4:31 pm Brittany Parnell (ershenb): Approved for CCC Secretary 3. 12/15/17 3:00 pm Barry Flachsbart (barryf): Approved for Social Sciences DSCC Chair 4. 12/15/17 3:32 pm Brittany Parnell (ershenb): Approved for Pending CCC Agenda post 5. 01/09/18 4:02 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda 6. 01/10/18 9:39 am srapr: Approved for Campus
Catalog Description	Overview of mobile technology use in business environments. Topics include: mobile industry; mobile network and wireless standards; mobile devices; mobile web design and app development; social and user experience issues; mobile marketing and commerce. Project required.	
Prerequisites	<del>IS&amp;T 3333 or equivalent.</del>	
Field Trip Statement		
Credit Hours	LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3	
Required for Majors	No	
Elective for Majors	No	
Justification for change:	Instructor has changed the course slightly and prerequisite is no longer needed.	
Semesters previously offered as an experimental course		
Co-Listed Courses:		
Course Reviewer Comments		

Key: 1871

Curricula  
Committee Chair

History

1. May 2, 2014 by  
barryf (1871.1)
2. Jun 30, 2014 by  
lahne (1871.4)

[Preview Bridge](#)

## Course Change Request

Date Submitted: 11/20/17 3:33 pm

Viewing: **PSYCH 5010 : Seminar for ~~Introduction to~~ Industrial / Organizational Psychology**

File: 2342.7

Last approved: 05/08/17 3:15 am

Last edit: 11/21/17 3:19 pm

Changes proposed by: weidnern

Catalog Pages referencing this course	<a href="#">Psychology</a>
Other Courses referencing this course	In The Prerequisites: <a href="#">PSYCH 6602 : Job Attitudes, Emotions, and Discretionary Behaviors</a> <a href="#">PSYCH 6610 : Leadership, Motivation, and Culture</a>

Requested Effective Change Date	Fall <del>2017</del> <b>2018</b>
Department	Psychological Science
Discipline	Psychology (PSYCH)
Course Number	5010
Title	<b>Seminar for <del>Introduction to</del> Industrial / Organizational Psychology</b>
Abbreviated Course Title	<b>Ind Org Psych Seminar <del>Intro</del> I/O Psychology</b>

Catalog Description	<b>A seminar course for general overviews</b> <del>Review</del> of the most recent <del>theoretical and applied</del> research in <b>Industrial-Organizational Psychology</b> . <del>advanced personnel and organizational psychology. Topics will include personnel selection, training and performance appraisal, job attitudes, motivation, work groups and teams, leadership, organizational culture, and organizational development.</del>
Prerequisites	Graduate standing.
Field Trip Statement	
Credit Hours	LEC: <del>0</del> <b>3</b> LAB: 0    IND: 0    RSD: <del>3</del> <b>0</b> Total: 3
Required for Majors	<del>No</del> <b>Yes</b>
Elective for Majors	<b>Yes</b> <del>No</del>

Justification for change:	This is designed to return 5010 to a seminar course. This course will remain on the books, but will not be offered yet under the new curriculum. We just want to have the number remain available. A new course "Psych 5020" will be proposed and inserted into the curriculum for Fall 2018 in place of this 5010 course.
Semesters previously	

- In Workflow
1. RPSYCHOL Chair
  2. CCC Secretary
  3. Social Sciences DSCC Chair
  4. Pending CCC Agenda post
  5. CCC Meeting Agenda
  6. Campus Curricula Committee Chair
  7. FS Meeting Agenda
  8. Faculty Senate Chair
  9. Registrar
  10. CAT entry
  11. Peoplesoft

- Approval Path
1. 11/20/17 2:52 pm  
Kristy Giacomelli (kristyg): Rollback to Initiator
  2. 11/20/17 4:07 pm  
murray:  
Approved for RPSYCHOL Chair
  3. 11/21/17 8:41 am  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
  4. 11/21/17 9:10 am  
Barry Flachsbart (barryf):  
Approved for Social Sciences DSCC Chair
  5. 11/21/17 3:27 pm  
Brittany Parnell (ershenb):  
Approved for Pending CCC Agenda post
  6. 01/09/18 4:03 pm  
Brittany Parnell (ershenb):  
Approved for CCC Meeting Agenda

offered as an  
experimental  
course

Co-Listed  
Courses:

7. 01/10/18 9:40 am  
sraper: Approved  
for Campus  
Curricula  
Committee Chair

Course Reviewer **kristyg (11/20/17 2:52 pm)**: Rollback: Rollback per Dr. Murray.  
Comments

History

1. Jan 13, 2017 by  
weidnern  
(2342.1)
2. May 8, 2017 by  
weidnern  
(2342.5)

Key: 2342

[Preview Bridge](#)

## Course Change Request

<b>New Course Proposal</b>		In Workflow
Date Submitted: 11/20/17 3:39 pm Viewing: <b>PSYCH 5020 : Introduction to Industrial-Organizational Psychology</b> File: 4500 Last edit: 11/21/17 9:54 am Changes proposed by: weidnern		<ol style="list-style-type: none"> <li>1. <b>RPSYCHOL Chair</b></li> <li>2. <b>CCC Secretary</b></li> <li>3. <b>Social Sciences DSCC Chair</b></li> <li>4. <b>Pending CCC Agenda post</b></li> <li>5. <b>CCC Meeting Agenda</b></li> <li>6. <b>Campus Curricula Committee Chair</b></li> <li>7. <b>FS Meeting Agenda</b></li> <li>8. Faculty Senate Chair</li> <li>9. Registrar</li> <li>10. CAT entry</li> <li>11. Peoplesoft</li> </ol>
Programs referencing this course	<a href="#">INORGPS-MS: Industrial Organizational Psychology MS</a>	
Requested Effective Change Date Department Discipline Course Number Title Abbreviated Course Title	Fall 2018 Psychological Science Psychology (PSYCH) 5020 Introduction to Industrial-Organizational Psychology Intro to Ind Org Psych	<b>Approval Path</b> 1. 11/20/17 4:08 pm murray: Approved for RPSYCHOL Chair 2. 11/21/17 9:55 am Brittany Parnell (ershenb): Approved for CCC Secretary 3. 11/22/17 9:19 pm Barry Flachsbart (barryf): Approved for Social Sciences DSCC Chair 4. 11/27/17 10:06 am Brittany Parnell (ershenb): Approved for Pending CCC Agenda post 5. 01/09/18 4:03 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda 6. 01/10/18 9:40 am sraper: Approved for Campus
Catalog Description Prerequisites Field Trip Statement Credit Hours Required for Majors Elective for Majors	Review of the most recent theoretical and applied research in advanced personnel and organizational psychology. Topics will include personnel selection, training and performance appraisal, job attitudes, motivation, work groups and teams, leadership, organizational culture, and organizational development. Graduate Standing LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3 Yes No	
Justification for new course:	<p>We have been asked to change the course number from 5010 to a number that is more appropriate since the course numbers ending in 10 are generally reserved for Seminar courses.</p> <p>Since a number change would kill the 5010 number, we are instead creating a Psych 5020 course which will take the place of the old 5010 in our curriculum. We felt 5020 would be a sufficient and appropriate number to use as this is still and introductory level course for our I-O MS program. If there is a reason that number won't work either, we are open to other suggestions.</p>	
Semesters previously offered as an	This will be taking the place of Psych 5010 which has been offered in the Fall semester for 4 years now. Enrollment- FS14: 6, FS15: 12, FS16: 12, FS17: 15	

experimental  
course

Curricula  
Committee Chair

Co-Listed  
Courses:

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Course Reviewer  
Comments

Key: 4500

[Preview Bridge](#)

## Course Change Request

Date Submitted: 10/10/17 11:26 am

Viewing: **SYS ENG 6110 : Risk Modeling and Optimization under Uncertainty** ~~Function-Based Risk Analysis~~

File: 719.1

Last edit: 12/21/17 8:40 am

Changes proposed by: qinr

Catalog Pages referencing this course [Engineering Management](#)

Requested **Fall 2018** ~~08/01/2014~~  
Effective Change Date

Department Engineering Management and Systems Engineering

Discipline Systems Engineering (SYS ENG)

Course Number 6110

Title **Risk Modeling and Optimization under Uncertainty** ~~Function-Based Risk Analysis~~

Abbreviated **Rsk Mod and Opt Uncert**  
Course Title ~~Function-Based Risk Analysis~~

Catalog Description  
Risk analysis of products and systems will be **explored**. ~~explored using product functionality as the starting point.~~ Traditional probabilistic risk assessment techniques will be covered along with recent approaches (**i.e., stochastic programming, robust optimization, and dynamic programming**) that use historical data **based risk models** to **realize optimal risk management**. ~~produce automatic risk assessments.~~

Prerequisites  
Graduate standing.

Field Trip  
Statement

Credit Hours    LEC: 3            LAB: 0            IND: 0            RSD: 0            Total: 3

Required for    No  
Majors

In Workflow

1. **RENGMNGT Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. CAT entry
11. Peoplesoft

Approval Path

1. 10/04/17 9:53 am  
Suzanna Long  
(longsuz):  
Approved for RENG MNGT Chair
2. 10/09/17 11:34 am  
Brittany Parnell (ershenb):  
Rollback to Initiator
3. 10/10/17 11:28 am  
Suzanna Long (longsuz):  
Approved for RENG MNGT Chair
4. 10/12/17 11:40 am  
Brittany Parnell

<p>Elective for Majors <b>Yes <del>No</del></b></p>	<p>(ershenb): Approved for CCC Secretary</p>
<p>Justification for change: Change the course name to be in-line with the advancement of methodology and the growth of relevant engineering applications. Co-list it with Engineering Management to allow more students to take and include it in their graduate study plan.</p> <p>Semesters previously offered as an experimental course</p> <p>Co-Listed Courses: <b>ENG MGT 6415 - Course Not Found</b></p>	<p>5. 11/21/17 9:58 am sraper: Approved for Engineering DSCC Chair</p> <p>6. 11/21/17 3:27 pm Brittany Parnell (ershenb): Approved for Pending CCC Agenda post</p> <p>7. 01/09/18 4:05 pm Brittany Parnell (ershenb): Approved for CCC Meeting Agenda</p> <p>8. 01/10/18 9:40 am</p>
<p>Course Reviewer Comments <b>ershenb (10/09/17 11:34 am):</b> Rollback: Please adjust co-list: ENG MGT 6414 is an existing course. <b>sraper (11/13/17 10:04 am):</b> checked elective for majors and changed abbreviated title.</p>	<p>sraper: Approved for Campus Curricula Committee Chair</p>

Key: 719

[Preview Bridge](#)



# ARC ENG-BS: ARCHITECTURAL ENGINEERING BS

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## In Workflow

1. RCIVILEN Chair (burken@mst.edu)
2. CCC Secretary (ershenb@mst.edu)
3. Engineering DSCC Chair (sraper@mst.edu)
4. Pending CCC Agenda post (ershenb@mst.edu)
5. CCC Meeting Agenda (ershenb@mst.edu)
6. Campus Curricula Committee Chair (sraper@mst.edu)
7. FS Meeting Agenda (ershenb@mst.edu)
8. Faculty Senate Chair (sedighs@mst.edu)
9. Registrar (kristyg@mst.edu)
10. Kristy Giacomelli (kristyg@mst.edu)

## Approval Path

1. Tue, 03 Oct 2017 10:04:06 GMT  
Joel Burken (burken): Approved for RCIVILEN Chair
2. Wed, 04 Oct 2017 14:52:59 GMT  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. Tue, 21 Nov 2017 15:53:16 GMT  
sraper: Approved for Engineering DSCC Chair
4. Tue, 21 Nov 2017 21:25:28 GMT  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. Tue, 09 Jan 2018 22:52:34 GMT  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. Thu, 11 Jan 2018 15:18:00 GMT  
sraper: Approved for Campus Curricula Committee Chair

## History

1. Sep 27, 2013 by Lahne Black (lahne)
2. Sep 27, 2013 by Lahne Black (lahne)
3. Apr 28, 2014 by Lahne Black (lahne)
4. Aug 4, 2014 by pantaleoa
5. Jan 30, 2015 by Stuart Baur (baur)
6. Sep 21, 2015 by Stuart Baur (baur)
7. Sep 15, 2016 by Crystal Wilson (wilsoncry)

Date Submitted: Thu, 28 Sep 2017 21:31:33 GMT

**Viewing: ARC ENG-BS : Architectural Engineering BS**

**File: 143.20**

**Last approved: Thu, 15 Sep 2016 19:40:43 GMT**

**Last edit: Tue, 09 Jan 2018 22:51:44 GMT**

Changes proposed by: baur

## Start Term

Fall 2018

## Program Code

ARC ENG-BS

## Department

Civil, Architectural, and Environmental Engineering

## Title

Architectural Engineering BS

## Program Requirements and Description

# Architectural Engineering Bachelor of Science

Entering freshmen desiring to study Architectural Engineering will be admitted to the Freshman Engineering Program. They will, however, be permitted, if they wish, to state a Architectural Engineering preference, which will be used as a consideration for available freshman departmental scholarships. The focus of the Freshman Engineering program is on enhanced advising and career counseling, with the goal of providing to the student the information necessary to make an informed decision regarding the choice of a major.

For the Bachelor of Science degree in Architectural Engineering a minimum of 129 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. An average of at least two grade points per credit hour must be attained. An average of at least two grade points per credit hour must also be maintained in all courses taken in Architectural Engineering.

Each student's program of study must contain a minimum of 21 credit hours of course work in general education and must be chosen according to the following rules:

1. All students are required to take one American history course, one economics course, one humanities course, and ENGLISH 1120. The history course is to be selected from HISTORY 1200 (preferred), HISTORY 1300, or HISTORY 1310. The economics course may be either ECON 1100 or ECON 1200. Art 3203 is required.
2. Depth requirement. Three credit hours must be taken in humanities or social sciences at the 2000-level or above. This will be satisfied by taking the required History 2510 and 4550. All courses taken to satisfy the depth requirement must be taken after graduating from high school.
3. The Gen Ed course chosen must meet requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog and may include one communications course in addition to ENGLISH 1120.
4. Special topics and special problems and honors seminars are allowed only by petition to and approval by the student's department chair.

The Architectural Engineering program at Missouri S&T is characterized by its focus on the scientific basics of engineering and its innovative application; indeed, the underlying theme of this educational program is the application of the scientific basics to engineering practice through attention to problems and needs of the public. The necessary interrelations among the various topics, the engineering disciplines, and the other professions as they naturally come together in the solution of real world problems are emphasized as research, analysis, synthesis, and design are presented and discussed through classroom and laboratory instruction.

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1100	1	MATH 1215	4
FR ENG 1100 <sup>2</sup>	1	General Ed Elective <sup>1</sup>	3
MATH 1214	4	MECH ENG 1720	3
ENGLISH 1120	3	PHYSICS 1135	4
General Ed Elective <sup>1</sup>	3		
CHEM 1310 & CHEM 1319	5		
	17		14
Sophomore Year			
First Semester	Credits	Second Semester	Credits
CIV ENG 2200 <sup>2</sup>	3	STAT 3113	3
MATH 2222	4	CIV ENG 2210 <sup>2</sup>	3
PHYSICS 2135	4	CIV ENG 2211	1
CIV ENG 2401 <sup>2</sup>	3	ARCH ENG 2103	3
ARCH ENG 2003	3	ART 3203	3
		MATH 3304	3
		MECH ENG 2350	2
	17		18
Junior Year			
First Semester	Credits	Second Semester	Credits
ARCH ENG 3201 <sup>2</sup>	3	ARCH ENG 4820 <sup>2</sup>	3

CIV ENG 3330 <sup>2</sup>	3	ARCH ENG 4800 <sup>2</sup>	3
MECH ENG 2527	3	CIV ENG 3116	3
ARCH ENG 3804	3	HISTORY 2510	3
ENG MGT 1210	2	ARCH ENG 3220	3
CIV ENG 3715	3		
	17		15

#### Senior Year

First Semester	Credits	Second Semester	Credits
ARCH ENG 4010	1	ARCH ENG 4097	3
ARCH ENG 3210	3	ARCH ENG Technical Elective <sup>3,4</sup>	3
ARCH ENG 4448	3	CIV ENG 4729	3
ARCH ENG Technical Elective <sup>3,4</sup>	3	General Education Elective <sup>1</sup>	3
HISTORY 4550	3	Basic Science Elective <sup>5</sup>	3
ARCH ENG 4850	3		
	16		15

Total Credits: 129

- <sup>1</sup> All general education electives must be approved by the student's advisor. Students must comply with the general education requirements with respect to selection and depth of study. These requirements are specified in the current catalog.
- <sup>2</sup> A grade of 'C' or better required to satisfy graduation requirements.
- <sup>3</sup> A grade of 'C' or better may be required in ARCH ENG technical elective prerequisite courses. Refer to the Missouri S&T undergraduate catalog for this prerequisite information.
- <sup>4</sup> Choose technical electives from approved lists under Emphasis Areas for Architectural Engineering Students. A maximum of 3 credits of independent study (ARCH ENG 5000 or ARCH ENG 4099) may be used as a technical elective. Additional independent study course may be taken but will not count towards the B.S. Architectural Engineering degree.
- <sup>5</sup> Each student is required to take three hours of basic science electives in consultation with his/her academic advisor. This course must be selected from the following: Chem 1301, Geo 1111, Geo 2610, Bio Sci 1213, Bio Sci 1943, Phys 1505, or Phys 2305

**Note:** All Architectural Engineering students must take the Fundamentals of Engineering examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree, however, it is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process as described in Assessment Requirements found elsewhere in this catalog.

## Emphasis Areas and Course Listings by Area for Architectural Engineering Students

### Area I, Structural Engineering

ARCH ENG 5001	Special Topics	6
ARCH ENG 5203	Applied Mechanics In Structural Engineering	3
ARCH ENG 5205	Structural Analysis II	3
ARCH ENG 5260	Analysis And Design Of Wood Structures	3
ARCH ENG 5207	Computer Methods of Structural Analysis	3
ARCH ENG 5210	Advanced Steel Structures Design	3
ARCH ENG 5220	Advanced Concrete Structures Design	3
ARCH ENG 5222	Prestressed Concrete Design	3
ARCH ENG 5729	Foundation Engineering II	3
ARCH ENG 5231	Infrastructure Strengthening with Composites	3
ARCH ENG 5206	Low-Rise Building Analysis And Design	3
ARCH ENG 5208	Structural Dynamics	3

### Area II, Construction Engineering and Project Management

ARCH ENG 5442	Construction Planning and Scheduling Strategies	3
ARCH ENG 5445	Construction Methods	3
ARCH ENG 5446	Management Of Construction Costs	3
ARCH ENG 5448	Green Engineering: Analysis of Constructed Facilities	3
ARCH ENG 5449	Engineering and Construction Contract Specifications	3
ENG MGT 5110	Managerial Decision Making	3
ENG MGT 5613	Value Analysis	3
ENG MGT 5711	Total Quality Management	3

## Area III, Environmental Systems for Buildings

ARCH ENG 5001	Special Topics	0-6
ARCH ENG 5642	Sustainability, Population, Energy, Water, and Materials	3
ARCH ENG 5665	Indoor Air Pollution	3
ARCH ENG 5850	Residential Renewable Energy Systems	3
ENG MGT 5513	Energy and Sustainability Management Engineering	3

## Mechanical Emphasis Courses

MECH ENG 5309	Engineering Acoustics I	3
MECH ENG 5566	Solar Energy Technology	3
MECH ENG 5575	Mechanical Systems For Environmental Control	3

## Electrical Emphasis Courses

ELEC ENG 3340	Basic Programmable Logic Controllers	3
ELEC ENG 5150	Photovoltaic Systems Engineering	3
COMP ENG 2210 & COMP ENG 2211	Introduction to Digital Logic and Computer Engineering Laboratory	4

## Area IV, Construction Materials

ARCH ENG 5203	Applied Mechanics In Structural Engineering	3
CIV ENG 5113	Composition And Properties Of Concrete	3
CIV ENG 5118	Smart Materials And Sensors	3
CIV ENG 5156	Concrete Pavement Design	3
CER ENG 5810	Principles Of Engineering Materials	3

## Architectural Engineering Courses

ARCH ENG 2103	Architectural Materials And Methods Of Construction	3
ARCH ENG 3804	Architectural Design II	3
ART 3203	Architectural Design I	3
ARCH ENG 4820	Building Lighting Systems	3

## Architectural Engineering Courses (cross-list with existing civil engineering courses)

ARCH ENG 2003	Engineering Communications and Computations	3
ARCH ENG 2001	Special Topics	0-6
ARCH ENG 3000	Special Problems	1-6
ARCH ENG 3001	Special Topics	0-6
ARCH ENG 2002	Cooperative Engineering Training	1
ARCH ENG 4010	Senior Seminar: Engineering In A Global Society	1
ARCH ENG 3201	Structural Analysis I	3
ARCH ENG 3210	Structural Design in Metals	3
ARCH ENG 3220	Reinforced Concrete Design	3
ARCH ENG 4447	Ethical, Legal and Professional Engineering Practice	2
ARCH ENG 4448	Fundamentals Of Contracts And Construction Engineering	3
ARCH ENG 4097	Senior Design Project	3
ARCH ENG 5000	Special Problems	6
ARCH ENG 5001	Special Topics	6
ARCH ENG 5205	Structural Analysis II	3
ARCH ENG 5260	Analysis And Design Of Wood Structures	3
ARCH ENG 5207	Computer Methods of Structural Analysis	3
ARCH ENG 5210	Advanced Steel Structures Design	3
ARCH ENG 5220	Advanced Concrete Structures Design	3
ARCH ENG 5222	Prestressed Concrete Design	3
ARCH ENG 5445	Construction Methods	3
ARCH ENG 5446	Management Of Construction Costs	3
ARCH ENG 5449	Engineering and Construction Contract Specifications	3
ARCH ENG 5231	Infrastructure Strengthening with Composites	3
ARCH ENG 4099	Undergraduate Research	6

## Civil Engineering Courses (required courses, emphasis area, and/or technical electives)

CIV ENG 3715	Fundamentals of Geotechnical Engineering	3
CIV ENG 3116	Construction Materials, Properties And Testing	3

CIV ENG 4729	Foundation Engineering	3
CIV ENG 3330	Engineering Fluid Mechanics	3
CIV ENG 5113	Composition And Properties Of Concrete	3
CIV ENG 5117	Asphalt Pavement Design	3
CIV ENG 5729	Foundation Engineering II	3
CIV ENG 5441	Professional Aspects Of Engineering Practice	3
CIV ENG 5445	Construction Methods	3
CIV ENG 5446	Management Of Construction Costs	3
CIV ENG 5449	Engineering and Construction Contract Specifications	3

#### Justification for request

#### Supporting Documents

#### Course Reviewer Comments

**sraper (Fri, 10 Nov 2017 15:02:00 GMT):** Changed language as related to the old "Approved List" and deleted sentence about signing to release FE results.

**sraper (Fri, 10 Nov 2017 15:02:51 GMT):** added "and" to revised statement.

**sraper (Mon, 13 Nov 2017 15:56:34 GMT):** edit Gen Ed statement.

**ershenb (Tue, 09 Jan 2018 22:51:44 GMT):** removed the spacing before and after "chosen" found in 3. of the general education rules. changed History 3550 to History "4550" found in 2. of the general education rules section.

Key: 143

# AUTOENG-MI: MINOR IN AUTOMATION ENGINEERING

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## In Workflow

1. RELECENG Chair (daryl@mst.edu)
2. CCC Secretary (ershenb@mst.edu)
3. Engineering DSCC Chair (sraper@mst.edu)
4. Pending CCC Agenda post (ershenb@mst.edu)
5. CCC Meeting Agenda (ershenb@mst.edu)
6. Campus Curricula Committee Chair (sraper@mst.edu)
7. FS Meeting Agenda (ershenb@mst.edu)
8. Faculty Senate Chair (sedighs@mst.edu)
9. Registrar (kristyg@mst.edu)
10. Kristy Giacomelli (kristyg@mst.edu)

## Approval Path

1. Sat, 04 Nov 2017 20:56:33 GMT  
Daryl Beetner (daryl): Approved for RELECENG Chair
2. Mon, 06 Nov 2017 15:05:29 GMT  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. Tue, 21 Nov 2017 15:53:24 GMT  
sraper: Approved for Engineering DSCC Chair
4. Tue, 21 Nov 2017 21:25:30 GMT  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. Tue, 09 Jan 2018 22:39:05 GMT  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. Wed, 10 Jan 2018 15:36:07 GMT  
sraper: Approved for Campus Curricula Committee Chair

## History

1. Apr 28, 2014 by Kelvin Erickson (kte)
2. May 7, 2014 by Lahne Black (lahne)
3. Jul 20, 2015 by pantaleoa

Date Submitted: Thu, 02 Nov 2017 19:33:45 GMT

## Viewing: AUTOENG-MI : Minor in Automation Engineering

File: 230.12

Last approved: Mon, 20 Jul 2015 17:25:22 GMT

Last edit: Mon, 06 Nov 2017 15:04:50 GMT

Changes proposed by: kte

## Start Term

Fall 2018

## Program Code

AUTOENG-MI

## Department

Electrical and Computer Engineering

## Title

Minor in Automation Engineering

## **Program Requirements and Description**

# **Minor in Automation Engineering**

A minor in automation engineering will require the following:

- Pass ELEC ENG 3340 Basic Programmable Logic Controllers with a "C" or better
- Pass one of the following courses with a "C" or better:
  - ELEC ENG 3320 Control Systems
  - MECH ENG 4479 Automatic Control Of Dynamic Systems
  - CHEM ENG 4110 Chemical Engineering Process Dynamics And Control
- Pass 9 additional hours of coursework from the following list. A "C" or better is required for all 9 hours.
  - CHEM ENG 5370 Intermediate Process Dynamics And Control
  - CHEM ENG 5190/ELEC ENG 5350 Plantwide Process Control
  - CHEM ENG 4310/MECH ENG 5644 Interdisciplinary Problems In Manufacturing Automation
  - ELEC ENG 4380 Practicum in Automation Engineering (no more than one can be applied to the Automation Engineering Minor)
  - ELEC ENG 5340 Advanced PLC
  - ELEC ENG 5345 PLC Motion Control
  - ELEC ENG 5870/MECH ENG 5478 Mechatronics
  - MECH ENG 5449 Robotic Manipulators and Mechanisms
  - MECH ENG 5655 Manufacturing Equipment Automation

### **Justification for request**

Elec Eng 5345 added to the list of additional courses. It is a new automation engineering course and its permanent number was effective with the Spring 2017 semester.

### **Supporting Documents**

### **Course Reviewer Comments**

ershenb (Mon, 06 Nov 2017 15:04:50 GMT): updated start term to Fall 2018

Key: 230

# GE ENG-BS: GEOLOGICAL ENGINEERING BS

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## In Workflow

1. RGEOENG Chair (borrokd@mst.edu)
2. CCC Secretary (ershenb@mst.edu)
3. Sciences DSCC Chair (shannonk@mst.edu)
4. Engineering DSCC Chair (sraper@mst.edu)
5. Pending CCC Agenda post (ershenb@mst.edu)
6. CCC Meeting Agenda (ershenb@mst.edu)
7. Campus Curricula Committee Chair (sraper@mst.edu)
8. FS Meeting Agenda (ershenb@mst.edu)
9. Faculty Senate Chair (sedighs@mst.edu)
10. Registrar (kristyg@mst.edu)
11. Kristy Giacomelli (kristyg@mst.edu)

## Approval Path

1. Sun, 27 Aug 2017 14:31:15 GMT  
David Borrok (borrokd): Approved for RGEOENG Chair
2. Mon, 28 Aug 2017 14:52:51 GMT  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. Wed, 06 Sep 2017 18:09:36 GMT  
Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. Tue, 21 Nov 2017 15:58:04 GMT  
sraper: Approved for Engineering DSCC Chair
5. Tue, 21 Nov 2017 21:26:43 GMT  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
6. Tue, 09 Jan 2018 22:38:19 GMT  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
7. Thu, 11 Jan 2018 15:18:11 GMT  
sraper: Approved for Campus Curricula Committee Chair

## History

1. Mar 18, 2014 by Lahne Black (lahne)
2. Nov 18, 2014 by pantaleoa
3. Nov 18, 2014 by pantaleoa
4. Jul 20, 2015 by pantaleoa

Date Submitted: Sat, 26 Aug 2017 19:20:30 GMT

**Viewing: GE ENG-BS : Geological Engineering BS**

**File: 156.7**

**Last approved: Mon, 20 Jul 2015 20:09:25 GMT**

**Last edit: Wed, 10 Jan 2018 19:20:25 GMT**

Changes proposed by: grotekr

### Start Term

Fall 2018

### Program Code

GE ENG-BS

### Department

Geosciences and Geological and Petroleum Engineering



**Title**

Geological Engineering BS

**Program Requirements and Description**  
**Bachelor of Science**  
**Geological Engineering**

Entering freshmen desiring to study geological engineering will be admitted to the Freshman Engineering Program. They will, however, be permitted, if they wish, to state a geological engineering preference, which will be used as a consideration for available freshman departmental scholarships. The focus of the Freshman Engineering program is on enhanced advising and career counseling, with the goal of providing to the student the information necessary to make an informed decision regarding the choice of a major.

For the bachelor of science degree in geological engineering a minimum of 128 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. A student must maintain at least two grade points per credit hour for all courses taken in the student's major department, and an average of at least two grade points per credit hour must be maintained in geological engineering.

The geological engineering curriculum contains a required number of hours in humanities and social sciences. Each student's program of study must contain a minimum of 18 credit hours of course work from the humanities and the social sciences areas and should be chosen according to the following rules:

1. All students are required to take one American history course and one economics course. The history course is to be selected from HISTORY 1200, HISTORY 1300, HISTORY 1310, or POL SCI 1200. The economics course may be either ECON 1100 or ECON 1200. Some disciplines require one humanities course to be selected for art, English, foreign languages, music, philosophy, speech and media studies, or theater.
2. Of the remaining hours, six credit hours must be taken in humanities or social sciences at the 2000 level or above and must meet requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog. Each of these courses must have as a prerequisite one of the humanities or social sciences courses already taken. Foreign language courses numbered 1180 can be considered to be one of these courses. (Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 3000 level.)
3. Some departments list specific requirements; e.g. a psychology course, a literature course, and /or a second semester of economics. Selections should be made to ensure that these requirements are met.
4. Special topics, special problems courses and honors seminars are allowed only by petition to and approval by the student's program head.

The geological engineering program at Missouri S&T is characterized by its focus on the scientific basics of engineering and its innovative application; indeed, the underlying theme of this educational program is the application of the scientific basics to engineering practice through attention to problems and needs of the public. The necessary interrelations among the various topics, the engineering disciplines, and the other professions as they naturally come together in the solution of real world problems are emphasized as research, analysis, synthesis, and design are presented and discussed through classroom and laboratory instruction.

<b>Freshman Year</b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
MATH 1214	4	MATH 1215	4
CHEM 1310	4	Chemistry/Geochemistry Elective <sup>b</sup>	3
CHEM 1100	1	MECH ENG 1720	3
CHEM 1319	1	PHYSICS 1135	4
ENGLISH 1120	3	Humanities/Soc Sci Elective <sup>a</sup>	3
FR ENG 1100	1		
Humanities/Soc Sci Elective <sup>a</sup>	3		
		17	

<b>Sophomore Year</b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
MATH 2222	4	MATH 3304	3
PHYSICS 2135	4	CIV ENG 2200	3
GEO ENG 3148	3	GEO ENG 2110	1
GEO ENG 1150	3	GEOLOGY 2611	3
GEO ENG 1119	1	GEO ENG 3175	3
		Humanities/Soc Sci Elective <sup>a</sup>	3

**Junior Year**

First Semester	Credits	Second Semester	Credits
MECH ENG 2350		2 CIV ENG 3330	3
CIV ENG 2210	3	GEO ENG 4115	3
GEOLOGY 3310	3	GEO ENG 5443	3
Economics Elective <sup>j</sup>	3	Technical Communications Elective <sup>d</sup>	3
Humanities/Soc Sci Elective <sup>a</sup>	3	Humanities/Soc Sci Elective <sup>a</sup>	3
Technical Elective (Technical Electives) <sup>g</sup>	3		
	17		15

**Senior Year**

First Semester	Credits	Second Semester	Credits
Geophysics Elective <sup>i</sup>	3	GEO ENG 5174	3
GEO ENG 4010	0.5	GEO ENG 4010	0.5
GEO ENG 5331	3	Earth Mechanics Elective <sup>e</sup>	3
GEO ENG 5441	3	Eng Econ Elective <sup>f</sup>	3
GEO ENG 5090 or 5092 <sup>h</sup>	3	Technical Electives <sup>g</sup>	6
CIV ENG 3715 or MIN ENG 4823	3		
	15.5		15.5

Total Credits: 128

- a The sequence of course selection must provide both breadth and depth of content and must meet requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog. A total of 18 hours of humanities and social science credit is required.
- b The chemistry/geochemistry elective must be selected from chemistry, geochemistry or biology courses as approved by your advisor.
- c The Technical Communications elective can be selected from ENGLISH 1160, ENGLISH 3560, SP&M S 1185, or the complete four-course sequence in Advanced ROTC (MIL ARMY 3250, MIL ARMY 3500, MIL ARMY 4250, and MIL ARMY 4500 or AERO ENG 5758, AERO ENG 4790, and AERO ENG 5481).
- d To be selected from GEO ENG 5471, GEO ENG 5381, MIN ENG 4823, PET ENG 2510, PET ENG 3520, CIV ENG 3715, CIV ENG 4729, or CIV ENG 5715.
- e To be selected from ENG MGT 5210, MIN ENG 3512, or PET ENG 4590 or both ENG MGT 1100 and ENG MGT 1210.
- f To be selected from advanced courses in geological, mining, petroleum or civil engineering, geology or other courses with approval of your advisor. Must contain design content and must be approved by your advisor.
- g Students may take GEO ENG 5090 or GEO ENG 5092 for senior design credit.
- h The Geophysics elective can be selected from GEO ENG 5736, GEO ENG 5761, or GEO ENG 5782.
- i The Economics Elective must be selected from Econ 1100 or Econ 1200.

All GE students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade is not required; however, it is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process.

Geological engineering students must earn the grade of "C" or better in all geological engineering courses to receive credit toward graduation. The total number of credit hours required for a degree in Geological Engineering is 128. The assumption is made that a student admitted to the Department has completed 34 hours toward graduation to fulfill the requirements of the Freshman Engineering program.

## Geological Engineering Emphasis Areas

Electives are selected by the student with advisor approval. Some appropriate electives are listed for each emphasis area.

### Environmental Protection and Hazardous Waste Management

GEO ENG 5235	Environmental Geological Engineering	3
GEO ENG 5237	Geological Aspects Of Hazardous Waste Management	3
GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
GEO ENG 5331	Subsurface Hydrology	3
GEO ENG 4115	Statistical Methods in Geology and Engineering	3
GEO ENG 4276	Environmental Aspects Of Mining	3
GEO ENG 5233	Risk Assessment In Environmental Studies	3
CIV ENG 3715	Fundamentals of Geotechnical Engineering	3

## Groundwater Hydrology and Contaminant Transport

GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
GEO ENG 5233	Risk Assessment In Environmental Studies	3
GEO ENG 5174	Geological Engineering Field Methods	3
GEO ENG 5331	Subsurface Hydrology	3
GEO ENG 4115	Statistical Methods in Geology and Engineering	3
GEO ENG 5441	Engineering Geology And Geotechnics	3
CIV ENG 3715	Fundamentals of Geotechnical Engineering	3
PET ENG 3330	Well Logging	3

## Engineering Geology and Geotechnics

GEO ENG 5471	Rock Engineering	3
CIV ENG 3715	Fundamentals of Geotechnical Engineering	3
MIN ENG 4823	Rock Mechanics	3
CIV ENG 4729	Foundation Engineering	3
GEO ENG 5146	Applications Of Geographic Information Systems	3
GEO ENG 5441	Engineering Geology And Geotechnics	3
GEO ENG 4115	Statistical Methods in Geology and Engineering	3

## Petroleum, Energy and Natural Resources

PET ENG 3520	Petroleum Reservoir Engineering	3
MIN ENG 4823	Rock Mechanics	3
GEO ENG 5146	Applications Of Geographic Information Systems	3
GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
GEOLOGY 5511	Applied Petroleum Geology	3
PET ENG 2510	Properties Of Hydrocarbon Fluids	3
PET ENG 1110	Introduction to Petroleum Engineering	1
PET ENG 3330	Well Logging	3
PET ENG 4520	Well Test Analysis	3

## Quarry Engineering

MIN ENG 4823	Rock Mechanics	3
GEO ENG 5575	Aggregates And Quarrying	3
CIV ENG 3116	Construction Materials, Properties And Testing	3
GEO ENG 5471	Rock Engineering	3
GEO ENG 4276	Environmental Aspects Of Mining	3
MIN ENG 3913	Mineral Identification and Exploration	3
MIN ENG 5612	Principles of Explosives Engineering	3
MIN ENG 5822	Strata Control	3

### Justification for request

Two changes are requested:

1. In the fall semester of the sophomore year, Geo Eng 1120 has been changed to Geo Eng 1119. Geo Eng 1120 does not exist. Geo Eng 1119 is the necessary course.
2. In the fall semester of the junior year, the "Earth Energy Elective" has been replaced with "Technical Elective". The Geo Eng faculty have decided that the earth energy requirement is unnecessarily restrictive, and current earth energy courses either require excessive numbers of prerequisites or are not offered with sufficient frequency for students to routinely enroll in these courses.

### Supporting Documents

#### Course Reviewer Comments

**ershenb (Mon, 28 Aug 2017 14:52:26 GMT):** updated Start Term to Fall 2018

**shannonk (Wed, 06 Sep 2017 14:45:15 GMT):** What about the course MIN ENG 308, this course number appears to need updating

**shannonk (Wed, 06 Sep 2017 18:09:07 GMT):** MIN ENG 308 Course not found removed after communication with David Borrok, old course number

**sraprer (Wed, 13 Sep 2017 21:13:31 GMT):** Awaiting answers to questions with regard to H/SS restriction that does not match CEC/Engineering policy, and FE statement.

**sraprer (Fri, 10 Nov 2017 15:32:45 GMT):** various edits related to H/SS list and FE statement.

**ershenb (Fri, 10 Nov 2017 16:39:27 GMT):** Per the request of Dr. Raper, removed AERO ENG 351 from Footnote D

**ershenb (Tue, 09 Jan 2018 22:33:14 GMT):** Changed "1000" to "2000" in 2. of the Geological engineering curriculum Changed "H/SS Elective" to "Humanities/Soc Sci Elective"

**ershenb (Tue, 09 Jan 2018 22:37:02 GMT):** .

**ershenb (Wed, 10 Jan 2018 19:20:25 GMT):** Footnote C had been removed so I updated the remaining footnote letters to keep them in the correct alphabetical order, per the request of Dr. Raper.

Key: 156

# HCI-MI: HUMAN-COMPUTER INTERACTION AND USER EXPERIENCE MINOR

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## In Workflow

1. RINFSCTE Chair (siauk@mst.edu)
2. CCC Secretary (ershenb@mst.edu)
3. Social Sciences DSCC Chair (barryf@mst.edu)
4. Pending CCC Agenda post (ershenb@mst.edu)
5. CCC Meeting Agenda (ershenb@mst.edu)
6. Campus Curricula Committee Chair (sraper@mst.edu)
7. FS Meeting Agenda (ershenb@mst.edu)
8. Faculty Senate Chair (sedighs@mst.edu)
9. Registrar (kristyg@mst.edu)
10. Kristy Giacomelli (kristyg@mst.edu)

## Approval Path

1. Thu, 09 Nov 2017 04:16:12 GMT  
siauk: Approved for RINFSCTE Chair
2. Thu, 09 Nov 2017 17:08:57 GMT  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. Thu, 09 Nov 2017 17:23:57 GMT  
Barry Flachsbar (barryf): Approved for Social Sciences DSCC Chair
4. Tue, 21 Nov 2017 21:26:46 GMT  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. Tue, 09 Jan 2018 22:24:17 GMT  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. Wed, 10 Jan 2018 15:38:46 GMT  
sraper: Approved for Campus Curricula Committee Chair

## History

1. Mar 17, 2015 by Barry Flachsbar (barryf)
2. Jul 28, 2015 by kleb6b
3. Jul 29, 2015 by pantaleoa
4. May 16, 2016 by pantaleoa

Date Submitted: Wed, 08 Nov 2017 15:58:37 GMT

**Viewing: HCI-MI : Human-Computer Interaction and User Experience Minor**

**File: 238.6**

**Last approved: Mon, 16 May 2016 18:36:31 GMT**

**Last edit: Tue, 09 Jan 2018 22:22:59 GMT**

Changes proposed by: barryf

## Start Term

Summer 2018

## Program Code

HCI-MI

## Department

Business and Information Technology

## Title

Human-Computer Interaction and User Experience Minor

## Program Requirements and Description

### Minor in Human-Computer Interaction and User Experience

The minor in human-computer interaction and user experience requires the following 15 hours of coursework:

PSYCH 1101	General Psychology	3
IS&T 4654	Web and Digital Media Development	3
IS&T 5885	Human-Computer Interaction	3
And two of the following		6
IS&T 4680	Introduction to Web and New Media Studies	
IS&T 5886	Prototyping Human-Computer Interactions	
IS&T 5887	Human-Computer Interaction Evaluation	

#### Justification for request

Provide additional flexibility

#### Supporting Documents

#### Course Reviewer Comments

ershenb (Wed, 22 Nov 2017 15:30:14 GMT): updated Start Term to Fall 2018

ershenb (Tue, 09 Jan 2018 22:22:59 GMT): updated Start Term to "Summer 2018"

Key: 238

# INORGPS-MS: INDUSTRIAL ORGANIZATIONAL PSYCHOLOGY MS

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## In Workflow

1. RPSYCHOL Chair (murray@mst.edu)
2. CCC Secretary (ershenb@mst.edu)
3. Social Sciences DSCC Chair (barryf@mst.edu)
4. Pending CCC Agenda post (ershenb@mst.edu)
5. CCC Meeting Agenda (ershenb@mst.edu)
6. Campus Curricula Committee Chair (sraper@mst.edu)
7. FS Meeting Agenda (ershenb@mst.edu)
8. Faculty Senate Chair (sedighs@mst.edu)
9. Registrar (kristyg@mst.edu)
10. Kristy Giacomelli (kristyg@mst.edu)

## Approval Path

1. Mon, 20 Nov 2017 22:07:23 GMT  
murray: Approved for RPSYCHOL Chair
2. Wed, 22 Nov 2017 14:59:12 GMT  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. Tue, 05 Dec 2017 18:12:19 GMT  
Brittany Parnell (ershenb): Approved for Social Sciences DSCC Chair
4. Thu, 07 Dec 2017 15:27:53 GMT  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. Tue, 09 Jan 2018 22:19:56 GMT  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. Wed, 10 Jan 2018 15:39:02 GMT  
sraper: Approved for Campus Curricula Committee Chair

## History

1. Apr 17, 2014 by Lahne Black (lahne)
2. Apr 17, 2014 by Lahne Black (lahne)
3. Apr 24, 2014 by Lahne Black (lahne)
4. Apr 24, 2014 by Lahne Black (lahne)
5. Apr 24, 2014 by Lahne Black (lahne)
6. May 7, 2014 by Lahne Black (lahne)
7. Jul 8, 2014 by pantaleoa
8. Jul 29, 2014 by pantaleoa
9. Jun 19, 2015 by nstone
10. Jun 23, 2015 by pantaleoa
11. Jul 24, 2015 by pantaleoa
12. Jul 24, 2015 by pantaleoa
13. Dec 1, 2016 by Nathan Weidner (weidnern)
14. Jul 11, 2017 by Crystal Wilson (wilsoncry)

Date Submitted: Mon, 20 Nov 2017 21:45:06 GMT

**Viewing: INORGPS-MS : Industrial Organizational Psychology MS**

**File: 234.20**

**Last approved: Tue, 11 Jul 2017 13:42:20 GMT**

**Last edit: Tue, 05 Dec 2017 18:13:00 GMT**

Changes proposed by: weidnern

**Start Term**

Fall 2018

**Program Code**

INORGPS-MS

**Department**

Psychological Science

**Title**

Industrial Organizational Psychology MS

**Program Requirements and Description****Master of Science in Industrial-Organizational Psychology****Admission Requirements**

Students interested in the M.S. in I-O psychology program should review the admissions requirements listed on our website (<http://psych.mst.edu/graduate/indorgpsych/>).

**Program Requirements**

The M.S. in industrial-organizational psychology requires 40 credit hours which includes a thesis or non-thesis option. Students will complete 24 credit hours of core courses, 10 hours of methods courses, and either 6 hours of elective credits or 6 hours of thesis credits. Applied internship experiences are suggested, but not required as part of the program. The program will take at least 2 years to complete and classes are offered both on-campus and via distance.

**Core Courses (24 hours)**

PSYCH 5020	Introduction to Industrial-Organizational Psychology
PSYCH 5601	Small Group Dynamics
PSYCH 5602	Organizational Development
PSYCH 5700	Job Analysis and Performance Management
PSYCH 6610	Leadership, Motivation, and Culture
PSYCH 6702	Personnel Selection
PSYCH 6602	Job Attitudes, Emotions, and Discretionary Behaviors
PSYCH 6700	Training and Development

**Methods Courses (10 hours)**

PSYCH 5201	Psychometrics
PSYCH 5210	Advanced Research Methods
PSYCH 5012	Ethics and Professional Responsibilities
PSYCH 5202	Applied Psychological Data Analysis

**Electives from list below or Thesis (6 hours)**

PSYCH 5710	Advanced Human Factors
PSYCH 5600	Advanced Social Psychology
PSYCH 5001.001	Advanced Cognitive Psychology
PSYCH 5001.002	Occupational Health and Safety

Students completing a thesis would need to complete the following in place of electives:

PSYCH 6099	Research
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**Justification for request**

We previously included Psych 5010 which was a seminar course. This has caused problems due to the limitation on seminar courses for MS programs.

To address this issue, we had changed 5010 to a lecture course. That has caused confusion because the XX10 courses are supposed to be reserved for seminars.

To address these issues, we have created a new course 5020 which will take the place of our 5010 seminar. 5010 will revert to a seminar course and will be an elective. 5020 will become a required course and be included in place of 5010. 5010 is being changed to "seminar in I-O Psych" and the new 5020 course is picking up the "Introduction to I-O Psychology" name. We hope to have these changes in place for the Fall 2018 semester.

**Supporting Documents**



#### Course Reviewer Comments

**ershenb (Tue, 21 Nov 2017 16:13:15 GMT):** .

**barryf (Thu, 23 Nov 2017 03:34:00 GMT):** Fixed Core Courses list. BarryF I think we still need to fix the Methods Courses by listing the credit hours. I think we still need to clarify the Electives or Thesis section by listing the options and credit hours. BarryF

**barryf (Wed, 29 Nov 2017 20:35:47 GMT):** Minor wording change in electives box.

**ershenb (Tue, 05 Dec 2017 18:13:00 GMT):** Approved course form per the request of Dr. Flachsbart (technical issues).

Key: 234

# PRE LAW-MI: PRE LAW MINOR

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## In Workflow

1. RHISTORY Chair (sfogg@mst.edu)
2. CCC Secretary (ershenb@mst.edu)
3. Arts & Humanities DSCC Chair (dewitt@mst.edu)
4. Pending CCC Agenda post (ershenb@mst.edu)
5. CCC Meeting Agenda (ershenb@mst.edu)
6. Campus Curricula Committee Chair (sraper@mst.edu)
7. FS Meeting Agenda (ershenb@mst.edu)
8. Faculty Senate Chair (sedighs@mst.edu)
9. Registrar (kristyg@mst.edu)
10. Kristy Giacomelli (kristyg@mst.edu)

## Approval Path

1. Tue, 31 Oct 2017 20:35:52 GMT  
sfogg: Approved for RHISTORY Chair
2. Wed, 01 Nov 2017 14:04:18 GMT  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. Wed, 01 Nov 2017 14:19:12 GMT  
Petra Dewitt (dewitt): Approved for Arts & Humanities DSCC Chair
4. Tue, 21 Nov 2017 21:26:53 GMT  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. Tue, 09 Jan 2018 22:43:09 GMT  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. Wed, 10 Jan 2018 15:39:46 GMT  
sraper: Approved for Campus Curricula Committee Chair

Date Submitted: Mon, 30 Oct 2017 21:06:56 GMT

**Viewing: PRE LAW-MI : Pre Law Minor**

**File: 121.1**

**Last edit: Tue, 09 Jan 2018 22:18:57 GMT**

Changes proposed by: dewittp

### Start Term

Fall 2018

### Program Code

PRE LAW-MI

### Department

History and Political Science

### Title

Pre Law Minor

## Program Requirements and Description

### Prelaw Minor

To qualify, students must complete a minimum of 18 hours of coursework in the following disciplines.

PHILOS 1115	Introduction To Logic	3
Select two of the following:		
HISTORY 1300	American History To 1877	6
HISTORY 1310	American History Since 1877	

POL SCI 1200	American Government
PHILOS 1105	Introduction To Philosophy
Select three of the following:	
ENGLISH 2410	Theory Of Written Communication
ENGLISH 3101	Advanced Composition
HISTORY 2510	History of Technology
HISTORY 3530	History of Science
HISTORY 4470	American Environmental History
HISTORY 2790	Historiography
PHILOS 3235	Business Ethics
PHILOS 4340	Social Ethics
PHILOS 4345	Philosophy Of Science
PHILOS 4350	Environmental Ethics
PHILOS 4360	Foundations Of Political Conflict
POL SCI 3300	Principles Of Public Policy
POL SCI 3310	Public Policy Analysis
POL SCI 3760	The American Presidency
POL SCI 3763	Contemporary Political Thought
May substitute ONE of these three courses with one of the following with the approval of the advisor:	
BUS 1210	Financial Accounting
BUS 2910	Business Law
COMP SCI 4700	Intellectual Property For Computer Scientists
IS&T 5168/PHILOS 4368	Law and Ethics in E-Commerce
ECON 3830	History Of Economic Thought
ECON 4430	Cost-Benefit Analysis
ECON 4820	Labor Economics
ENG MGT 5514	Patent Law
ENG MGT 5512	Legal Environment
ETYM 4306	Introduction To Etymology

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### Justification for request

Add the following courses to the minor to satisfy the requirements for three courses beyond the mandated courses for the degree:

- POL SC 225 Comparative Politics
- POL SC 226 International Relations
- POL SC 237 Contemporary Political Thought
- POL SC 290 American Political Parties
- POL SC 316 The American Presidency

### Supporting Documents

#### Course Reviewer Comments

ershenb (Wed, 01 Nov 2017 14:03:41 GMT): updated Start Term to Fall 2018  
 ershenb (Tue, 09 Jan 2018 22:18:57 GMT): Made the "S" in Substitute lowercase

Key: 121

# PROPOSED: BUSINESS APPLICATIONS AND SOFTWARE DEVELOPMENT MINOR

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## In Workflow

1. RINFSCTE Chair (siauk@mst.edu)
2. CCC Secretary (ershenb@mst.edu)
3. Social Sciences DSCC Chair (barryf@mst.edu)
4. Pending CCC Agenda post (ershenb@mst.edu)
5. CCC Meeting Agenda (ershenb@mst.edu)
6. Campus Curricula Committee Chair (sraper@mst.edu)
7. FS Meeting Agenda (ershenb@mst.edu)
8. Faculty Senate Chair (sedighs@mst.edu)
9. Registrar (kristyg@mst.edu)
10. Kristy Giacomelli (kristyg@mst.edu)

## Approval Path

1. Fri, 01 Dec 2017 01:28:36 GMT  
siauk: Approved for RINFSCTE Chair
2. Mon, 04 Dec 2017 21:32:28 GMT  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. Tue, 05 Dec 2017 15:32:47 GMT  
Brittany Parnell (ershenb): Approved for Social Sciences DSCC Chair
4. Thu, 07 Dec 2017 15:31:49 GMT  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. Tue, 09 Jan 2018 22:06:20 GMT  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. Wed, 10 Jan 2018 15:40:30 GMT  
sraper: Approved for Campus Curricula Committee Chair

## New Program Proposal

Date Submitted: Thu, 30 Nov 2017 13:54:23 GMT

**Viewing: PROPOSED : Business Applications and Software Development Minor**

**File: 255**

**Last edit: Tue, 05 Dec 2017 15:36:24 GMT**

Changes proposed by: barryf

### Start Term

Fall 2018

### Program Code

PROPOSED

### Department

Business and Information Technology

### Title

Business Applications and Software Development Minor

## Program Requirements and Description

**The Minor requires 15 credit hours, as follows:**

### Required Courses:

IS&T 3553

Modular Software Systems in Java

**And three courses from the following list:**

IS&T 1552	Implementing Information Systems: Data Perspective
IS&T 3131	Computing Internals And Operating Systems
IS&T 3420	Introduction to Data Science and Management
IS&T 3423	Database Management
IS&T 3443	Database Applications in Business
ERP 5240	Enterprise Application Development and Software Security

**Justification for request**

Demand from recruiters for students with a focus in this area, plus input from our Advisory Board.

**Supporting Documents****Course Reviewer Comments**

**ershenb (Tue, 05 Dec 2017 15:36:24 GMT):** Approved the course form per the request of Dr. Flachsbart (technical issues).

Key: 255

# PROPOSED: MASTER OF SCIENCE IN EXPLOSIVES TECHNOLOGY

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## In Workflow

1. RMINNUCL Chair (blusk@mst.edu)
2. CCC Secretary (ershenb@mst.edu)
3. Engineering DSCC Chair (sraper@mst.edu)
4. Pending CCC Agenda post (ershenb@mst.edu)
5. CCC Meeting Agenda (ershenb@mst.edu)
6. Campus Curricula Committee Chair (sraper@mst.edu)
7. FS Meeting Agenda (ershenb@mst.edu)
8. Faculty Senate Chair (sedighs@mst.edu)
9. Registrar (kristyg@mst.edu)
10. Kristy Giacomelli (kristyg@mst.edu)

## Approval Path

1. Wed, 08 Mar 2017 16:13:51 GMT  
Braden lusk (blusk): Approved for RMINNUCL Chair
2. Wed, 08 Mar 2017 17:13:07 GMT  
Kristy Giacomelli (kristyg): Approved for CCC Secretary
3. Mon, 15 May 2017 21:10:12 GMT  
sraper: Approved for Engineering DSCC Chair
4. Fri, 30 Jun 2017 14:38:19 GMT  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. Tue, 09 Jan 2018 22:43:35 GMT  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. Wed, 10 Jan 2018 15:40:01 GMT  
sraper: Approved for Campus Curricula Committee Chair

## New Program Proposal

Date Submitted: Tue, 07 Mar 2017 00:34:10 GMT

## Viewing: PROPOSED : Master of Science in Explosives Technology

File: 249

Last edit: Mon, 15 May 2017 21:10:09 GMT

Changes proposed by: kapqh4

### Start Term

Spring 2018

### Program Code

PROPOSED

### Department

Mining & Nuclear Engineering

### Title

Master of Science in Explosives Technology

## Program Requirements and Description

The explosives engineering program in the department of mining and nuclear engineering offers the master of science (M.S.) and doctor of philosophy (Ph.D.) degrees and a minor and certificate in explosives engineering for students with bachelor's degrees in engineering, science or technology. It also offers an explosives technology certificate and master of science (MS) for those with other bachelor's degrees. Due to the age profile of the explosives industry and attrition of personnel, as well as the rapid change in technology within this field, there is an immediate and growing need for

highly trained explosives professionals in both the civilian explosive, mining and civil excavating fields and government and the defense industry. Employers are looking for engineers and scientists with sophisticated skills in the integration of explosives technology into complex systems in a wide range of applications. Employers are also seeking M.S. and Ph.D. graduates because they can move quickly into managerial positions.

Faculty involved in a variety of explosives related research programs teach and direct the program in conjunction with instruction by industry specialists in a wide range of applications. Students will have opportunities to assist the faculty, both in research and teaching, as well as working alongside faculty and graduate students in other engineering and science fields such as civil, architectural, mechanical, chemical, aerospace, electrical, geological and materials engineering and geology, geophysics, chemistry and physics. The explosives engineering faculty and students will be active in the leading professional societies such as the International Society for Explosives Engineers and those in a wide range of associated areas. A security background check is required for all students in the program.

The M.S. program requires a minimum of 30 hours of graduate credit. A core of four courses is required of all students, and a module of allied courses in departments outside of explosives engineering is encouraged.

M.S. with thesis: The M.S. degree with thesis requires the completion of 24 hours of graduate course work and six hours of research (Exp Eng 6099), and the successful completion and defense of a research thesis.

Four of the following core courses are required of all M.S. students in Explosives Engineering:

Exp Eng 5612	Principles of Explosives Engineering Exp Eng 5622	Blasting Design and Technology
Exp Eng 5713	Demolition of Buildings and Structures	
Exp Eng 5922	Tunneling and Underground Construction Techniques	
Exp Eng 6412	Environmental Controls for Blasting	
Exp Eng 6312	Scientific Instrumentation for Explosives and Blasting	

Four of the following core courses are required of all M.S. students in Explosives Technology:

Exp Eng 5612	Principles of Explosives Engineering Exp Eng 5622	Blasting Design and Technology
Exp Eng 5711	Explosives in Industry	
Exp Eng 5713	Demolition of Buildings and Structures	
Exp Eng 5721	Specialty Uses of Energetic Materials	
Exp Eng 5914	Explosives Manufacturing	
Exp Eng 5922	Tunneling and Underground Construction Techniques	
Exp Eng 5711	Environmental Controls for Blasting	
Exp Eng 5721	Scientific Instrumentation for Explosives and Blasting	
Exp Eng 6112	Explosives Regulations	

Students select 12 hours of Exp Eng and other appropriate elective courses. M.S. in explosives engineering and explosives technology candidates are advised to group out-of-department courses into a module that fits their special interest.

M.S. without thesis (by coursework): The M.S. degree without thesis requires the completion of 30 hours of graduate coursework with the same stipulations as above. The six hours of research is replaced by course work which may include an explosives related cooperative work experience (Exp Eng 6070) or industry project (Exp Eng 6080) with an established company or government agency commonly using explosives and an additional explosives course.

#### **Justification for request**

We are applying for an M.S. degree in Explosives Technology. Building on our Masters of Explosives Engineering degree, the Masters of Explosives Technology degree has high potential for attracting students from our online certificate program, particularly from the military and government. The ATF, which currently sends 30-40 agents per year through our Explosives Technology Certificate program, has requested that we make changes to the Certificate program (currently in progress) to accommodate an extra 30-40 agents a year and also develop a Masters of Explosives Technology degree.

We receive a constant stream of inquires about our current program. However prospective students without an engineering or physical science degree are currently limited in their options. The Graduate Certificate in Explosives Technology was developed in response to the demand from these students. However, in order to continue on to the M.S. in Explosives Engineering, a series of makeup/prerequisite courses are required for most of these students. An M.S. in Explosives Technology would allow these students (who are mostly military) to continue on.

The ATF has requested that we develop the degree so that their agents can continue on to an M.S. degree. Currently only a handful of the agents that have received the Explosives Technology Graduate Certificate have had engineering or physical science degrees. They are wanting to double the number of agents they send through this program and to encourage their agents to continue on to an M.S. degree, and have requested that we develop the M.S. in Explosives Technology degree. In addition it would cater to the demand from military EOD and other students.

There will continue to be growing opportunities for graduates with explosives qualifications in the defense, consulting and explosives manufacturing industries and in government. It is expected that the overwhelming majority of our online students will already have a job in industry, the military or a government agency and will be using the M.S. to advance their career, but we would also like to be able to offer the degree on campus so that students can complete the degree in a shorter time frame and move on to a new career. We have already had army officers come to campus and complete their M.S. degree in Explosives Engineering upon their separation from the army

#### **Supporting Documents**

Explosives Technology MS Proposal 3-06-17.pdf

FinancialProjections - MS Explosives Technology.xlsx

#### **Course Reviewer Comments**

**sraper (Mon, 15 May 2017 21:10:09 GMT):** There were no objections from the DSCC to this new program.

Key: 249



# PROPOSED: MINOR IN FINANCIAL TECHNOLOGY (FINTECH)

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## In Workflow

1. RBUSADMN Chair (siauk@mst.edu)
2. CCC Secretary (ershenb@mst.edu)
3. Social Sciences DSCC Chair (barryf@mst.edu)
4. Pending CCC Agenda post (ershenb@mst.edu)
5. CCC Meeting Agenda (ershenb@mst.edu)
6. Campus Curricula Committee Chair (sraper@mst.edu)
7. FS Meeting Agenda (ershenb@mst.edu)
8. Faculty Senate Chair (sedighs@mst.edu)
9. Registrar (kristyg@mst.edu)
10. Kristy Giacomelli (kristyg@mst.edu)

## Approval Path

1. Fri, 01 Dec 2017 01:28:11 GMT  
siauk: Approved for RBUSADMN Chair
2. Mon, 04 Dec 2017 21:32:58 GMT  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. Tue, 05 Dec 2017 18:13:29 GMT  
Brittany Parnell (ershenb): Approved for Social Sciences DSCC Chair
4. Thu, 07 Dec 2017 17:03:27 GMT  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. Tue, 09 Jan 2018 22:06:00 GMT  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. Wed, 10 Jan 2018 15:40:09 GMT  
sraper: Approved for Campus Curricula Committee Chair

## New Program Proposal

Date Submitted: Thu, 30 Nov 2017 13:53:34 GMT

## Viewing: PROPOSED : Minor in Financial Technology (FinTech)

File: 256

Last edit: Tue, 05 Dec 2017 18:14:35 GMT

Changes proposed by: barryf

### Start Term

Fall 2018

### Program Code

PROPOSED

### Department

Business and Information Technology

### Title

Minor in Financial Technology (FinTech)

## Program Requirements and Description

The Minor requires 15 credit hours, as follows:

### Required Courses:

FINANCE 2150	Corporate Finance I
FINANCE 5310	Financial Modeling

IS&T 3420	Introduction to Data Science and Management
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**And one course from the following list:** 3

FINANCE 5160	Corporate Finance II
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FINANCE 5260	Investments I
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BUS 5230	Financial Statement Analysis
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**And one course from the following list:** 3

IS&T 5520	Data Science and Machine Learning with Python
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IS&T 4641	Digital Commerce and the Internet of Things
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IS&T 4780	Human and Organizational Factors in Cybersecurity
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ERP 5410	Use of Business Intelligence
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ERP 5210	Performance Dashboard, Scorecard and Data Visualization
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### **Justification for request**

Strong inputs from our Advisory Board, companies who hire our graduates, and our own research directions.

### **Supporting Documents**

### **Course Reviewer Comments**

ershenb (Tue, 05 Dec 2017 18:14:35 GMT): Approved per the request of Dr. Flachsbart (technical issues).

Key: 256

## Course Change Request

### New Experimental Course Proposal

Date Submitted: 10/25/17 3:43 pm

Viewing: **BIO SCI 5001.001 : Ichthyology**

File: 4492

Last edit: 01/09/18 10:38 am

Changes proposed by: duvernell

Requested	Fall 2018
Effective Change Date	
Department	Biological Sciences
Discipline	Biological Sciences (BIO SCI)
Course Number	5001
Topic ID	001
Experimental Title	Ichthyology
Experimental Abbreviated Course Title	Ichthyology
Instructors	David Duvernell

Experimental Catalog Description	An introduction to evolutionary relationships, ecology, morphology, physiology and behavior of fishes, with emphasis on local fauna. There will be four or five Saturday field collecting trips scheduled in the first six weeks of the semester, and students will be required to attend at least three of them.
Prerequisites	Bio Sci 1113 or Bio Sci 1213 and Bio Sci 1219; Bio Sci 1223 and Bio Sci 1229.
Field Trip Statement	
Credit Hours	LEC: 3      LAB: 1      IND: 0      RSD: 0      Total: 4

Justification for new course: This course will add a critical organismal diversity dimension to enhance both undergraduate and graduate programs. The Biological Sciences undergraduate and graduate programs do not currently offer any advanced organismal diversity courses on a regular basis. In addition, these programs offer relatively few options for students to enroll in lab courses or field courses.

Semester(s) previously taught: none

Co-Listed Courses:

Course Reviewer Comments: **ershenb (01/09/18 10:38 am)**: moved Field Trip Statement to Description section. Added ";" after Bio Sci 1219 and added a "." after Bio Sci 1229 in Prerequisites section.

#### In Workflow

1. **RBIOLSCI Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **CAT entry**
8. **Registrar**

#### Approval Path

1. 11/10/17 8:58 am  
David Duvernell (duvernell):  
Approved for  
RBIOLSCI Chair
2. 11/13/17 8:13 am  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
3. 11/17/17 12:19 pm  
Katie Shannon (shannonk):  
Approved for Sciences DSCC Chair
4. 11/21/17 3:25 pm  
Brittany Parnell (ershenb):  
Approved for Pending CCC Agenda post
5. 01/09/18 10:38 am  
Brittany Parnell (ershenb):  
Approved for CCC Meeting Agenda
6. 01/09/18 12:13 pm  
srapr: Approved for Campus Curricula Committee Chair

Key: 4492

7. 01/10/18 8:43 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CAT  
entry

[Preview Bridge](#)

## Course Change Request

### New Experimental Course Proposal

Date Submitted: 11/10/17 8:56 am

Viewing: **BIO SCI 5001.002 : Population and Conservation Genetics**

File: 4497

Last edit: 01/09/18 10:42 am

Changes proposed by: duvernellD

Requested	Fall 2018
Effective Change Date	
Department	Biological Sciences
Discipline	Biological Sciences (BIO SCI)
Course Number	5001
Topic ID	002
Experimental Title	Population and Conservation Genetics
Experimental Abbreviated Course Title	Pop and Cons Genetics
Instructors	David Duvernell

Experimental Catalog Description	An overview of population genetics theory with a focus on evolutionary processes (mutation, natural selection, genetic drift, inbreeding, recombination and gene flow), and a review of molecular data collection and analysis methods. Emphasis will be placed on application to conservation genetics with a review of examples from current literature.				
Prerequisites	Bio Sci 2223 and Bio Sci 2233.				
Field Trip Statement					
Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3

Justification for new course:	The topic of population and conservation genetics synthesizes the fields of molecular genetics and evolutionary biology with a focus on examples at the organism and population level. The Biological Sciences program is in need of more organism and population level courses, and this course fills that need while potentially appealing to students who think they are more interested in molecular biology.
Semester(s) previously taught	none
Co-Listed Courses:	

Course Reviewer Comments	<b>ershenb (12/07/17 10:56 am)</b> : Rollback: Rollback per the request of Dr. Shannon and Dr. Duvernell <b>ershenb (01/09/18 10:42 am)</b> : removed comma after Bio Sci 2223 and added "and" between Bio Sci 2223 and Bio Sci 2233.
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#### In Workflow

1. **RBIOLSCI Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **CAT entry**
8. **Registrar**

#### Approval Path

1. 11/10/17 8:59 am  
David Duvernell (duvernellD):  
Approved for  
RBIOLSCI Chair
2. 11/13/17 9:33 am  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
3. 11/17/17 12:20 pm  
Katie Shannon (shannonk):  
Approved for  
Sciences DSCC Chair
4. 11/21/17 3:25 pm  
Brittany Parnell (ershenb):  
Approved for  
Pending CCC Agenda post
5. 12/07/17 10:56 am  
Brittany Parnell (ershenb):  
Rollback to  
Sciences DSCC Chair for CCC Meeting Agenda
6. 12/07/17 11:20 am  
Katie Shannon (shannonk):

Key: 4497

- Approved for  
Sciences DSCC  
Chair
7. 12/07/17 11:31  
am  
Brittany Parnell  
(ershenb):  
Approved for  
Pending CCC  
Agenda post
8. 01/09/18 10:42  
am  
Brittany Parnell  
(ershenb):  
Approved for CCC  
Meeting Agenda
9. 01/09/18 12:18  
pm  
craper: Approved  
for Campus  
Curricula  
Committee Chair
10. 01/10/18 9:11 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CAT  
entry

[Preview Bridge](#)

## Experimental Course

Viewing: **CHEM ENG 4001.001 :**  
**Introduction to Phase Equilibrium**

File: 4440.5

Last approved: 01/10/18 9:59 am

Last edit: 10/31/17 11:23 am

Requested                      Spring 2018

Effective Change

Date

Department                      Chemical and Biochemical Engineering

Discipline                      Chemical Engineering (CHEM ENG)

Course Number                  4001

Topic ID                         001

Experimental

Title

Introduction to Phase Equilibrium

Experimental                      Phase Equilibrium

Abbreviated

Course Title

Instructors                      Dr. Christy Luks

### History

1. Jan 10, 2018 by  
marlene

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Experimental

Catalog

Description

This course is intended as a supplement to a mechanical Thermodynamics 1 course to prepare students for Thermodynamics 2. Review of the first and second law of thermodynamics for pure substances with emphasis on finding data for pure substances via fundamental relations and equations of state; phase equilibrium and fugacity of pure substances.

Prerequisites

Mech Eng 2519 and Math 2222.

Field Trip

Statement

Credit Hours

LEC: 1

LAB: 0

IND: 0

RSD: 0

Total: 1

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Justification for  
change:

Semester(s)  
previously taught

Co-Listed

Courses:

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Course Reviewer

Comments

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## Course Change Request

**New Experimental Course Proposal**

Date Submitted: 10/25/17 4:19 pm

Viewing: **CIV ENG 4001.001 : Infrastructure Sustainability through Recycling**

File: 4491

Last edit: 01/09/18 10:46 am

Changes proposed by: abdelrahmanm

Requested	Spring 2018
Effective Change Date	
Department	Civil, Architectural, and Environmental Engineering
Discipline	Civil Engineering (CIV ENG)
Course Number	4001
Topic ID	001
Experimental Title	Infrastructure Sustainability through Recycling
Experimental Abbreviated Course Title	Infrastructure Recycling
Instructors	Magdy Abdelrahman & Mark Fitch
Experimental Catalog Description	The course introduces infrastructure sustainability with a focus on recycling as used in rehabilitation techniques. Properties, types, usage, design and construction of recycled materials are presented. Environmental impacts are discussed.
Prerequisites	Preceded or accompanied by Civ Eng 2601 and preceded by Civ Eng 3116.
Field Trip Statement	
Credit Hours	LEC: 2      LAB: 1      IND: 0      RSD: 0      Total: 3
Justification for new course:	As recycling and rehabilitation of infrastructure is increasingly significant in Civil Engineering, this course provides knowledge and skills in the areas of material testing, environmental testing, and decision making related to recycling materials such as asphalt and concrete.
Semester(s) previously taught	
Co-Listed Courses:	
Course Reviewer Comments	<b>ershenb (01/09/18 10:46 am):</b> Switched the order of "Civ Eng 2601" and "Civ Eng 3116" in the Prerequisites.

## In Workflow

1. **RCIVILEN Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **CAT entry**
8. **Registrar**

## Approval Path

1. 11/14/17 3:48 pm  
Kristy Giacomelli (kristyg):  
Approved for RCIVILEN Chair
2. 11/16/17 2:08 pm  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
3. 11/21/17 9:53 am  
srafer: Approved for Engineering DSCC Chair
4. 11/21/17 3:26 pm  
Brittany Parnell (ershenb):  
Approved for Pending CCC Agenda post
5. 01/09/18 10:46 am  
Brittany Parnell (ershenb):  
Approved for CCC Meeting Agenda
6. 01/09/18 12:18 pm  
srafer: Approved for Campus Curricula Committee Chair
7. 01/10/18 9:10 am  
Marita Tibbetts (tibbettsmg):

Key: 4491

Approved for CAT  
entry

[Preview Bridge](#)

## Course Change Request

**New Experimental Course Proposal**

Date Submitted: 11/13/17 3:12 pm

Viewing: **CIV ENG 6001.002 : Pavement Management, Evaluation and Rehabilitation**

File: 4490

Last edit: 01/09/18 10:49 am

Changes proposed by: abdelrahmanm

Requested	Spring 2018
Effective Change Date	
Department	Civil, Architectural, and Environmental Engineering
Discipline	Civil Engineering (CIV ENG)
Course Number	6001
Topic ID	002
Experimental Title	Pavement Management, Evaluation and Rehabilitation
Experimental Abbreviated Course Title	Pavement Management
Instructors	Magdy Abdelrahman
Experimental Catalog Description	Advanced knowledge of pavement performance; pavement evaluation; implementation of pavement management at network and project levels; maintenance and rehabilitation strategies; life-cycle cost analysis.
Prerequisites	Graduate Standing.
Field Trip Statement	
Credit Hours	LEC: 2      LAB: 1      IND: 0      RSD: 0      Total: 3

Justification for new course: As rehabilitation of pavement is increasingly significant in Civil Engineering, this course provides advanced knowledge and skills in the areas of rehabilitation, maintenance, and decision making related to pavement management.

The course will build background for graduate students conducting research in the area of pavement engineering.

Semester(s) previously taught

Co-Listed Courses:

Course Reviewer **sraper (11/15/17 8:01 am)**: removed hyphen from course description.  
 Comments **ershenb (01/09/18 10:49 am)**: added a "." after "Graduate Standing" in the Prerequisites.

In Workflow

1. RCIVILEN Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. CAT entry
8. Registrar

Approval Path

1. 11/13/17 3:17 pm  
Joel Burken (burken):  
Approved for RCIVILEN Chair
2. 11/13/17 3:48 pm  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
3. 11/21/17 9:55 am  
sraper: Approved for Engineering DSCC Chair
4. 11/21/17 3:26 pm  
Brittany Parnell (ershenb):  
Approved for Pending CCC Agenda post
5. 01/09/18 10:50 am  
Brittany Parnell (ershenb):  
Approved for CCC Meeting Agenda
6. 01/09/18 12:18 pm  
sraper: Approved for Campus Curricula Committee Chair
7. 01/10/18 9:05 am  
Marita Tibbetts (tibbettsmg):

Key: 4490

Approved for CAT  
entry

[Preview Bridge](#)

## Course Change Request

**New Experimental Course Proposal**

Date Submitted: 11/03/17 6:12 pm

Viewing: **COMP SCI 3001.002 : Introduction to Data Science**

File: 4494

Last edit: 01/09/18 10:53 am

Changes proposed by: tauritzd

Requested	Fall 2018
Effective Change Date	
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	3001
Topic ID	002
Experimental Title	Introduction to Data Science
Experimental Abbreviated Course Title	Intro to Data Science
Instructors	Yanjie Fu

Experimental Catalog Description	This course introduces the fundamental concepts and lifecycle of data science, including (1) programming languages for data science, (2) data representation, collection and preprocessing, (3) data indexing, retrieval and management, (4) data mining, modeling, and visualization, (5) data security and privacy, and (6) data science system development.
Prerequisites	A grade of "C" or better in Comp Sci 2300, Comp Sci 2500, and in one of Stat 3113, Stat 3115, Stat 3117 or Stat 5643.
Field Trip Statement	None
Credit Hours	LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3

Justification for new course: Computer scientists increasingly work in data science, yet currently there is no undergraduate course in data science with a technically challenging computer science focus. This proposed new course remedies that lack and meets strong student demand for such a course, providing both an undergraduate level treatment of this timely material and complementing, as well as providing a foundation for, our graduate course offering in data mining, machine learning, computer vision, and deep learning.

Semester(s) previously taught: None

Co-Listed Courses:

Course Reviewer Comments: **ershenb (01/09/18 10:53 am):** removed "in" after Comp Sci 2300 in Prerequisites.

## In Workflow

1. RCOMPSCI Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. CAT entry
8. Registrar

## Approval Path

1. 11/04/17 10:08 am  
George Markowsky (markowskyg):  
Approved for RCOMPSCI Chair
2. 11/06/17 9:15 am  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
3. 11/21/17 9:56 am  
sraper: Approved for Engineering DSCC Chair
4. 11/21/17 3:26 pm  
Brittany Parnell (ershenb):  
Approved for Pending CCC Agenda post
5. 01/09/18 10:53 am  
Brittany Parnell (ershenb):  
Approved for CCC Meeting Agenda
6. 01/09/18 12:18 pm  
sraper: Approved for Campus Curricula Committee Chair

Key: 4494

7. 01/10/18 9:03 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CAT  
entry

[Preview Bridge](#)

## Course Change Request

### New Experimental Course Proposal

Date Submitted: 10/31/17 12:57 pm

Viewing: **ELEC ENG 3001.001 : Intelligent Robotics**

File: 4496

Last edit: 01/09/18 10:57 am

Changes proposed by: kte

Requested	Fall 2018
Effective Change Date	
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	3001
Topic ID	001
Experimental Title	Intelligent Robotics
Experimental Abbreviated Course Title	Intelligent Robotics
Instructors	Jagannathan Sarangapani

Experimental Catalog Description	Introduction to robotics, coordinate transformation, D-H parameters, forward and inverse kinematics, dynamics, state space representation, linear and computed torque control, sensing and intelligence, intelligent control.				
Prerequisites	A grade of "C" or better in Elec Eng 2120, Math 3108, and Math 3304; passing the Elec Eng Advancement Exam II.				
Field Trip Statement					
Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3

Justification for new course:	Increasing interest in robotics and lack of robotics courses at the undergraduate (below 5000 level) curriculum.				
Semester(s) previously taught	None				
Co-Listed Courses:	COMP ENG 3001 - Special Topics				

Course Reviewer Comments	<p><b>srapr (11/13/17 10:03 am)</b>: added "C" or better requirement to prereqs per K. Erickson and clarified as well.</p> <p><b>srapr (11/21/17 9:57 am)</b>: Modified course description as provided by K. Erickson (EE).</p> <p><b>ershenb (01/09/18 10:57 am)</b>: moved " a grade of "C" or better" to the beginning of the Prerequisite and added the word "and" before Math 3304.</p>				
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#### In Workflow

1. RELECENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. CAT entry
8. Registrar

#### Approval Path

1. 11/04/17 3:57 pm  
Daryl Beetner (daryl): Approved for RELECENG Chair
2. 11/06/17 4:11 pm  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. 11/21/17 9:57 am  
srapr: Approved for Engineering DSCC Chair
4. 11/21/17 3:26 pm  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. 01/09/18 10:58 am  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. 01/09/18 12:19 pm  
srapr: Approved for Campus Curricula Committee Chair
7. 01/10/18 9:02 am  
Marita Tibbetts (tibbettsmg):

Key: 4496

Approved for CAT  
entry

[Preview Bridge](#)



## Course Change Request

### New Experimental Course Proposal

Date Submitted: 10/23/17 3:30 pm

Viewing: **ELEC ENG 6001.006 : Introduction to Nonlinear Optics**

File: 4488

Last edit: 01/09/18 10:59 am

Changes proposed by: sweetk

Requested	Spring 2018
Effective Change Date	
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	6001
Topic ID	006
Experimental Title	Introduction to Nonlinear Optics
Experimental Abbreviated Course Title	Nonlinear Optics
Instructors	Jie Huang

Experimental Catalog Description	This course bridges the gap between conventional courses in optics/electromagnetics and the modern applications of optics in spectroscopy and photonics. The course will provide insight into the physical principle of nonlinear optics and interaction of light with matter from the introduction of anisotropic media to second and third order nonlinear optics.
Prerequisites	A basic background in optics or electromagnetics is recommended.
Field Trip Statement	
Credit Hours	LEC: 3      LAB: 0      IND: 0      RSD: 0      Total: 3.0

Justification for new course: The field of nonlinear optics emerges from a number of disciplines including electrical engineering, physics, materials science and engineering, and mechanical engineering. The proposed course is designed to bridge the gap between the conventional courses in optics/electromagnetics and the modern applications of optics in spectroscopy and photonics. There is no similar course on campus. Missouri S&T has more than 20 faculty working in optics and photonics, but only offers a few courses related to optics. This course will benefit the graduate students pursuing their M.S. or Ph.D. degrees in photonics, physics, electrical engineering and materials science.

Semester(s) previously taught  
Co-Listed Courses:

Course Reviewer **ershenb (01/09/18 10:59 am)**: changed LEC credit hours from "3.0" to "3"  
Comments

#### In Workflow

1. RELECENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. CAT entry
8. Registrar

#### Approval Path

1. 10/25/17 12:03 pm  
Daryl Beetner (daryl): Approved for RELECENG Chair
2. 10/25/17 12:21 pm  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. 11/21/17 9:57 am  
sraper: Approved for Engineering DSCC Chair
4. 11/21/17 3:26 pm  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. 01/09/18 11:00 am  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. 01/09/18 12:19 pm  
sraper: Approved for Campus Curricula Committee Chair

Key: 4488 | 7. 01/09/18 2:28 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CAT  
entry

[Preview Bridge](#)

## Course Change Request

### New Experimental Course Proposal

Date Submitted: 11/30/17 8:07 am

Viewing: **HISTORY 3001.003 : Slavery in the Atlantic World**

File: 4504

Last edit: 01/09/18 2:32 pm

Changes proposed by: popejj

Requested	Fall 2018
Effective Change Date	
Department	History and Political Science
Discipline	History (HISTORY)
Course Number	3001
Topic ID	003
Experimental Title	Slavery in the Atlantic World
Experimental Abbreviated Course Title	Slavery Atlantic World
Instructors	Pope

Experimental Catalog Description	This course explores the role of slavery in the history of the Americas, Europe, and Africa. By focusing on the development of "New World Slavery," the course evaluates how slavery shaped the world we live in today.				
Prerequisites	Hist 1100 or Hist 1200 or Hist 1300.				
Field Trip Statement					
Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3

Justification for new course:	Missouri S&T does not currently offer a course on American or world slavery.
Semester(s) previously taught	
Co-Listed Courses:	

Course Reviewer Comments	<b>ershenb (01/09/18 11:01 am):</b> lowercased "HIST" to "Hist" in Prerequisites. <b>tibbettsmg (01/09/18 2:32 pm):</b> Rollback: test
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#### In Workflow

1. **RHISTORY Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **CAT entry**
8. **Registrar**

#### Approval Path

1. 11/30/17 8:34 am  
sfogg: Approved for RHISTORY Chair
2. 11/30/17 10:06 am  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. 12/01/17 9:03 am  
Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair
4. 12/07/17 9:38 am  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. 01/09/18 11:02 am  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. 01/09/18 12:19 pm  
srafer: Approved for Campus Curricula Committee Chair

Key: 4504

7. 01/09/18 2:32 pm  
Marita Tibbetts  
(tibbettsmg):  
Rollback to CCC  
Secretary for CAT  
entry
8. 01/09/18 2:35 pm  
Brittany Parnell  
(ershenb):  
Approved for CCC  
Secretary
9. 01/10/18 9:01 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CAT  
entry

[Preview Bridges](#)

## Course Change Request

### New Experimental Course Proposal

Date Submitted: 11/29/17 6:41 pm

Viewing: **MECH ENG 6001.002 : Fundamentals of Metal Additive Manufacturing Processes**

File: 4502

Last edit: 12/07/17 11:19 am

Changes proposed by: nisbett

Requested Spring 2018

Effective Change  
Date

Department Mechanical & Aerospace Engineering

Discipline Mechanical Engineering (MECH ENG)

Course Number 6001

Topic ID 002

Experimental Title Fundamentals of Metal Additive Manufacturing Processes

Experimental Abbreviated Title Metal Additive Manufact

Course Title

Instructors Lianyi Chen

Experimental

Catalog

Description

This course covers the fundamental physics in metal additive manufacturing processes, particularly the following processes: powder flow and spattering, laser-powder interaction, melt pool dynamics, solidification, postprocessing, residual stress evolution, and additive manufacturing of emerging materials (metal matrix composites and metallic glasses).

Prerequisites

Mech Eng 5519 or Mech Eng 5525.

Field Trip

Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

In Workflow

1. RMECHENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. CAT entry
8. Registrar

Approval Path

1. 11/30/17 7:28 am  
James Drallmeier (drallmei):  
Approved for RMECHENG Chair
2. 11/30/17 10:03 am  
Brittany Parnell (ershenb):  
Approved for CCC Secretary
3. 12/04/17 1:36 pm  
srafer: Approved for Engineering DSCC Chair
4. 12/07/17 11:21 am  
Brittany Parnell (ershenb):  
Approved for Pending CCC Agenda post
5. 01/09/18 11:03 am  
Brittany Parnell (ershenb):

<p>Justification for new course: Important developing area of research and application.</p> <p>Semester(s) previously taught None</p> <p>Co-Listed Courses:</p>	<p>Approved for CCC Meeting Agenda</p> <p>6. 01/09/18 12:19 pm craper: Approved for Campus Curricula Committee Chair</p> <p>7. 01/09/18 2:38 pm</p>
<p>Course Reviewer Comments <b>sraper (12/04/17 1:36 pm):</b> Changed prereq statement.</p>	<p>Marita Tibbetts (tibbettsmg): Approved for CAT entry</p>

Key: 4502

[Preview Bridge](#)

## Course Change Request

### New Experimental Course Proposal

Date Submitted: 11/17/17 1:55 pm

Viewing: **NUC ENG 2001.001 : Professional Development for Nuclear Engineers**

File: 4498

Last edit: 01/09/18 11:05 am

Changes proposed by: schlegelj

Requested	Fall 2018
Effective Change Date	
Department	Mining & Nuclear Engineering
Discipline	Nuclear Engineering (NUC ENG)
Course Number	2001
Topic ID	001
Experimental Title	Professional Development for Nuclear Engineers
Experimental Abbreviated Course Title	Prof Dev Nuc Eng
Instructors	Joshua Schlegel

Experimental Catalog Description	An outline of key topics in professional development important for the success of engineering students both during their education and in their profession. Content will range from resume development to technical writing, problem solving approaches, and using computers to solve various types of engineering problems.
Prerequisites	Must be accompanied by Comp Sci 1971 or Comp Sci 1972.
Field Trip Statement	
Credit Hours	LEC: 1      LAB: 0      IND: 0      RSD: 0      Total: 1

Justification for new course:	This course is intended to help students prepare for internships and job searches and help familiarize them with tools and approaches they will need as they progress through their nuclear engineering program.
Semester(s) previously taught	None
Co-Listed Courses:	

Course Reviewer Comments	<b>ershenb (01/09/18 11:05 am):</b> removed "Co-requisite" from Prerequisites section and replaced with "Must be accompanied by"
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In Workflow

1. **RMINNUCL Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **CAT entry**
8. **Registrar**

Approval Path

1. 11/17/17 2:10 pm  
Braden lusk (blusk): Approved for RMINNUCL Chair
2. 11/20/17 10:39 am  
Brittany Parnell (ershenb): Approved for CCC Secretary
3. 11/21/17 9:58 am  
sraper: Approved for Engineering DSCC Chair
4. 11/21/17 3:26 pm  
Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
5. 01/09/18 11:05 am  
Brittany Parnell (ershenb): Approved for CCC Meeting Agenda
6. 01/09/18 12:19 pm  
sraper: Approved for Campus Curricula Committee Chair
7. 01/10/18 8:59 am  
Marita Tibbetts

Key: 4498

(tibbettsmg):  
Approved for CAT  
entry

[Preview Bridge](#)