Agenda
Campus Curricula Committee Meeting
March 6, 2013
12 pm, Room 117 Fulton Hall

Review of submitted DC forms:
DC #0450, Mechanical and Aerospace Engineering, Bachelor of Science in Mechanical Engineering, effective Fall 2013.

DC #0451, Mechanical and Aerospace Engineering, Bachelor of Science in Aerospace Engineering, effective Fall 2013.

DC #0452, Business and Information Technology, Minor in Marketing, effective Fall 2013.

DC #0453, Business and Information Technology, Minor in Management, effective Fall 2013.

DC #0461, Business and Information Technology, Bachelor of Science in Management and Information Systems, effective Fall 2013.

DC #0462, Business and Information Technology, Bachelor of Science in Information Science and Technology, effective Fall 2013.

DC #0463, Military Science, Minor in Military Science, effective Fall 2013.

DC #0464, History and Political Science, Minor in Science, Technology, and Humanity, effective Fall 2013.

Review of submitted CC forms:
CC #8366, Physics 304, Sci Edu and Quantitative Literacy for Middle Sch Teachers, effective Summer 2013.

CC #8367, History 270, History of Technology to 1900, effective Fall 2013.

CC #8368, Arts, Languages and Philosophy 397, Multidisciplinary Studies Capstone, effective Fall 2013.
CC #8369, Marketing 321, Consumer Behavior, effective Fall 2013.

CC #8379, Business 10, Introduction to College Success, effective Fall 2013.

**Review of submitted EC forms:**
EC #2460, Philosophy 301, Theoretical Ethics, effective Summer 2013.

**Tabled Items:**
CC #8307, Explosives Engineering 411, Research Methods.
CC #8425, Mining Engineering 476, Sustainability In Mining.
CC #8426, Mining Engineering 424, Underground Mine Design.
CC #8427, Mining Engineering 426, Surface Mine Design.
Effective Year: 2013  Effective Term:  Summer  ☐  Fall  ☑  Spring  ☐
(Creating or modifying a degree program must be effective for a Fall term.)

Degree Change Form (DC)
This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:
B.S. in Mechanical Engineering

Department: Mechanical & Aerospace Engineering

Briefly describe action requested (attach documentation as appropriate):
Add the following footnote j to the ME curriculum, as shown on the attached page. The footnote should be indicated with the following courses in the curriculum (as shown on the attached page):
Mc Eng 213, 221, 211, 208, 225, 231, 240, 242, 279, 261, 280

The text of the footnote j is as follows:

j) Students must be currently admitted to an engineering or science degree program, or receive permission of the MAE department chair, to enroll in this course.

The purpose of this modification is to prevent enrollment in these upper level courses by students that have not met the conditions for admission into one of the engineering or science degree programs.

Recommended by Department: [Signature]  Date: 1/12/2013

Recommended by DSCC: [Signature]  Date: 1/22/13

Approved by Curricula Committee: [Signature]  Date: 

Approved by Faculty Senate: [Signature]  Date: 

Revised November 2012
either Economics 121 or 122. The humanities course must be selected from the approved lists for art, English, foreign languages, music, philosophy, speech and media studies, or theater.

2) Depth requirement. Three credit hours must be taken in humanities or social sciences at the 100 level or above and must be selected from the approved list. This course must have as a prerequisite one of the humanities or social sciences courses already taken. Foreign language courses numbered 70 or 80 will be considered to satisfy this requirement. Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 300 level. All courses taken to satisfy the depth requirement must be taken after graduating from high school.

3) The remaining two courses are to be chosen from the list of approved humanities/social sciences courses and may include one communications course in addition to English 20.

4) Any specific departmental requirements in the general studies area must be satisfied.

5) Special topics and special problems and honors seminars are allowed only by petition and approval by the student's department chairman.

The Mechanical 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.

FREE ELECTIVES FOOTNOTE:
Free electives. Each student is required to take six hours of free electives in consultation with his/her academic advisor. Credits which do not count towards this requirement are deficiency courses (such as algebra and trigonometry), and extra credits in required courses. Any courses outside of Engineering and Science must be at least three credit hours.

FRESHMAN YEAR
First Semester Credit
FE 10-Study and Careers in Engineering .................... 1
Chem 1-General Chemistry* ........................................ 1
Chem 2-General Chemistry Lab ................................... 1
Math 14-Calculus I for Engineers* ................................ 4
Engl 20-Exposition and Argumentation ....................... 3
Hist-112, 175, 176, or Pol Sci 90 .......................... 16

Second Semester
IDE 20-Intro to Engineering Design ......................... 3
Math 15-Calculus II for Engineers* .......................... 4
Physics 23-Engineering Physics I* ............................ 3
Econ-121 or 122 .................................................. 3
Elective-Hum or Soc Sci ....................................... 17

SOPHOMORE YEAR
First Semester
Programming Elective* ........................................ 3
CE 50-Statics* .................................................. 3
Math 22-Calculus w/Analytic Geometry III* ............... 4
Physics 24-Eng Physics II* ................................... 4
Mc Eng 153-Intro to Manufacturing Processes ............. 3

Second Semester
Mc Eng 161-Intro to Design ..................................... 3
Mc Eng 219-Thermodynamics* .................................. 3
Mc Eng 160-Dynamics* ......................................... 3
Math 204-Elementary Differential Equations* ............. 3
Mt Eng 121-Metallurgy for Engineers* ...................... 3

JUNIOR YEAR
First Semester
Mc Eng 213-Machine Dynamics* .............................. 3
Mc Eng 221-Advanced Thermodynamics* .................... 3
El Eng 281-Electrical Circuits* ................................ 3
CE 110-Mechanics of Materials* .............................. 3
CE 120-Materials Lab ........................................... 1
Elective-Advanced Math/Stat or Cmp Sc ..................... 2

Second Semester
Mc Eng 211-Modeling and Analysis of Dyn Syst* ......... 3
Mc Eng 208-Machine Design 1* .............................. 3
Elective-Communications* ...................................... 3

SENIOR YEAR
First Semester
Mc Eng 242-Mech Engineering Systems* .................. 2
Mc Eng 279-Automatic Control of Dynamic Systems* .... 3
Mc Eng technical elective* ..................................... 3
Free Elective* .................................................. 3

Second Semester
Eng M 124-Practical Concepts for Tech Managers ......... 1
Eng M 137-Economic Analysis of Engr Projects .......... 2
Msc Eng 261-Eng Design* ...................................... 3
Msc Eng 280-Control Systems Lab* ......................... 1
Msc Eng 3xx technical elective* ............................. 3
Free Elective* .................................................. 3

NOTE: Students must satisfy the common engineering freshman year course requirements, and be admitted into the department, in addition to the sophomore, junior and senior year requirements listed above with a minimum of 128 hours

* A grade of "C" or better is required in Chem 1, Math 14, 15, 22, 204, Phys 23, 24, programming elective, Met Eng 121, CE 50, 110, Mc Eng 219, 160, and 211, both as prerequisite for follow-up courses in the curriculum and for graduation.

* Math 8 and 21 may be substituted for Math 14 and 15, respectively.
Mechanical Engineering

The programming elective consists of a lecture and lab combination, and may be selected from Cmp Sc 73/77, 74/78, or 53/54. Note that Cmp Sc 53/54 requires one more credit hour than the other options.

This course must be selected from the following: English 60, 160 or SP&M S 85, or the complete four course sequence in Advanced ROTC (Mil Sc 105, 106, 207 and 208 or Aerosp S 350, 351, 380 and 381.)

This course must be selected from the following: Cmp Sc 228, Math 203, 208, Stat 213, 215 or any 300-level math or computer science course approved by the student's advisor.

All 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.

Electives must be approved by the student's advisor. Six hours of technical electives, which may not include Ae Eng/EMech/Mc Eng 202, 300 or 390, must be in the Department of Mechanical and Aerospace Engineering. At least three of these technical elective hours in the Department must be at the 300 level. Honors students have special requirements for technical electives.

All Mechanical 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. Students must sign a release form giving the University access to their Fundamentals of Engineering Examination score.

Each student is required to take six hours of free electives in consultation with his/her academic advisor. Credits which do not count towards this requirement are deficiency courses (such as algebra and trigonometry), and extra credits in required courses. Any courses outside of Engineering and Science must be at least three credit hours.

Energy Conversion Emphasis Area for Mechanical Engineering

Students desiring to obtain a Bachelor of Science degree in Mechanical Engineering with an Emphasis Area in Energy Conversion must satisfy all the requirements of the Bachelor of Science degree in Mechanical Engineering, with the additional stipulation that four courses must be taken as follows:

a. Two courses from the following list: Mc Eng/Ae Eng 327, Mc Eng 333, Mc Eng 366, Mc Eng 371, Mc Eng 375, Ae Eng 369, Ae Eng 335.

b. One course from the following list: Mc Eng/Ae Eng 319, Mc Eng/Ae Eng 325, Mc Eng/Ae Eng 331, Mc Eng/Ae Eng 339

c. One additional course from either list "a" or list "b" or from the following list: Econ 345, El Eng 352, Env Eng 367, Nu Eng 317

Note: By using the free electives and technical electives to satisfy the above requirements, this emphasis area requires the same total number of credit hours as the BSME degree. A change of major form should be submitted to designate the Energy Conversion Emphasis Area.

Manufacturing Processes Emphasis Area for Mechanical Engineering

Students desiring to obtain a Bachelor of Science in Mechanical Engineering with an Emphasis Area in Manufacturing Processes must satisfy all requirements of the Bachelor of Science in Mechanical Engineering with the following modifications:

a. Mc Eng 253 is required.

b. One of the Mc Eng technical electives must be from the following Manufacturing/Automation courses: Mc Eng 353, 355, 349, and 308.

c. One of the Mc Eng technical electives must be from the following Design courses: Mc Eng 363, 308, 356, and 302.

d. Two courses 1) Mc Eng 357 or Mc Eng 308, and 2) Mc Eng 358 are required in lieu of Mc Eng 261.

e. The Math/Stat elective must be either Stat 213 or 215.

A suggested sequence for the Junior and Senior years is given below. Note that by using the free electives and technical electives to satisfy the above requirements, this emphasis area requires the same total number of credit hours as the BSME degree. A change of major form should be submitted to designate the Manufacturing Processes Emphasis Area.

JUNIOR YEAR

First Semester

Mc Eng 213-Machine Dynamics .................. 3
El Eng 281-Electrical Circuits .................. 3
Mc Eng 221- Applied Thermodynamics .......... 3
CE 110-Mechanics of Materials\* ............... 3
CE 120-Materials Lab .......................... 1
Stat 213-Stat Meth in Eng or Stat 215-Eng Stat 3

16

Second Semester

Mc Eng 211-Modeling and Analysis of Dyn Sys\* 3
Mc Eng 231-Thermofluid Mechanics ............. 3
Mc Eng 225-Heat Transfer .................... 3
Mc Eng 240-Mechanical Instrumentation ....... 2
Mc Eng 253-Manufacturing ................... 3
Elective-Communications\* .................... 3

17

SENIOR YEAR

First Semester

Mc Eng 242-Mech Eng Systems ................ 2
Mc Eng 379-Auto Control of Dynamic Systems 3
Mc Eng 208-Machine Design 1 .................. 3
Mc Eng 357-Integrated Prod & Proc Design ... 3
or Mc Eng 308-Rapid Product Design

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Effective Year: 2013  Effective Term: Summer □  Fall ☑  Spring □
(Creating or modifying a degree program must be effective for a Fall term.)

Degree Change Form (DC)
This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:
B.S. in Aerospace Engineering

Department: Mechanical & Aerospace Engineering

Briefly describe action requested (attach documentation as appropriate):
Add the following footnote 13 to the AE curriculum, as shown on the attached page. The footnote should be indicated with the following courses in the curriculum (as shown on the attached page):
Ae Eng 213, 231, 377, 251, 261, 271, 282, 235, 253, 280 or 380, 283, 281 or 382

The text of the footnote 13 is as follows:
13) Students must be currently admitted to an engineering or science degree program, or receive permission of the MAE department chair, to enroll in this course.

The purpose of this modification is to prevent enrollment in these upper level courses by students that have not met the conditions for admission into one of the engineering or science degree programs.

Recommended by Department: ____________________________ Date: 1/12/2013

Recommended by DSCC: _______________________________ Date: 1/22/2013

Approved by Curricula Committee: _______________________ Date: __________

Approved by Faculty Senate: ____________________________ Date: __________

Revised November 2012
Aerospace Engineering — 55

List of Notes:
1. Chemistry 1, 2 and 4 or an equivalent training program approved by Missouri S&T.
2. Must be one of the following: Political Science 90, History 112, History 175, or History 176.
3. Must be one of the following: Economics 121 or Economics 122.
4. A grade of "C" or better in Chem 1, Math 14, 15, 22, 204, Physics 23, 24 CE 50, 110 and Computer programming is required both for enrollment in ME 219, AE 213, AE 231, or AE 251 and for graduation.
5. A grade of "C" or better in AE Eng 160 and ME 219 is required both for enrollment in any courses which require either AE Eng 160 or ME 219 as prerequisites and for graduation.
6. Must be one of the following: Comp Sc 228, Math 203, Math 208, or any 300-level math or computer science course approved by the student's advisor.
7. Electives must be approved by the student's advisor. Nine hours of technical electives must be in Mechanical and Aerospace Engineering. Three hours of departmental technical electives must be at the 300-level. Honors students have special requirements for technical electives.
8. This course can be selected from English 60, 160, SP&M 85, or the complete four-course sequence in Advanced ROTC (Mil Sc 105, 106, 207, and 208 or Aerospace Studies 350, 351, 380, and 381).
9. All electives must be approved by the student's advisor. Students must comply with the requirements specified in the current catalog.
10. Each student is required to take six hours of free electives in consultation with his/her academic advisor. Credits which do not count towards this requirement are deficiency courses (such as algebra and trigonometry), and extra credits in required courses. Any courses outside of engineering and science must be at least three credit hours.
11. Computer Science requirement can be satisfied by taking CS 53 and CS 54.
12. Must be a course on engineering ethics, business ethics, social ethics, or any ethics course approved by the student's advisor.

NOTE: All Aerospace Engineering students must take the departmental Exit Exam prior to graduation.

Requirements for a Minor in Aerospace Engineering

A student who receives a bachelor of science degree in an accredited engineering program from Missouri S&T may receive a minor in aerospace engineering by completing the 15 hours of courses listed below.

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Effective Year: 2013
Effective Term: Summer ☐ Fall ☒ Spring ☐
(Creating or modifying a degree program must be effective for a Fall term)

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:
Business and Management Systems B.S., Minor in Marketing

Department: Business and Information Technology

The minor in Marketing is changing to expand and clarify the requirements beyond the first 6 hours. [Items (1) and (2) are identical to the current requirements; item (3) currently only states 9 hours of Marketing electives.]

Requirements will now be: Fifteen hours of course work, as listed below:
1) Econ 121 - Principles of Microeconomics or Econ 122 - Principles of Macroeconomics.
2) MKT 311 - Marketing.
3) 9 hours from the following list
   MKT 321 - Consumer Behavior
   MKT 331 - Digital Marketing and Promotions
   MKT 350 - Customer Focus and Satisfaction
   MKT 380 - Marketing Strategy
   ERP 342 - Customer Relationship Management in an ERP Environment
   Other Marketing electives approved by the department (MKT 300 and above)

At least 6 hours of the minor course work must be taken in residence at Missouri S&T.

Briefly describe action requested (Attach documentation as appropriate):

Date: 1/25/13

Revised: 9/12/2011

Recommended by Department: __________________________ (Chair signature) Date: 1/25/13

Recommended by: __________________________ (Chair signature) Date: 1/30/13

Discipline Specific Curricula Committee

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

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

01/25/13

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Effective Year: 2013
Effective Term: Summer □  Fall ☒  Spring □
(Creating or modifying a degree program must be effective for a Fall term)

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:
Business and Management Systems B.S., Minor in Management

Department: Business and Information Technology

Briefly describe action requested (Attach documentation as appropriate):
The minor in Management consists of 15 hours, as follows:
1) BUS 110 - Management and Organizational Behavior
2) one course from the following:
   BUS 230 - Business Law
   BUS 315 - Leadership and Teambuilding
   BUS 360 - Operations Management
   BUS 380 - Strategic Management
   IST 361 - Information Systems Project Management
3) and three courses from the following:
   BUS 311 - Business Negotiations
   BUS 350 - Managing Product and Service Quality
   BUS 370 - Human Resource Management
   EMgt 254 - Introduction to Project Management

At least 6 hours of the minor course work must be taken in residence at Missouri S&T.

Recommended by Department: ____________________________  Date: 1/25/13
(Chair signature)

Recommended by: ____________________________  Date: 1/30/13
Discipline Specific Curricula Committee  (Chair signature)

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

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

01/25/13
(Revised 9/12/2011)
Effective Year: 2013  Effective Term: Summer ☐ Fall ☑ Spring ☐
(Creating or modifying a degree program must be effective for a Fall term.)

Degree Change Form (DC)
This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:
B.S. in Management and Information Systems

Department: Business and Information Technology

Briefly describe action requested (attach documentation as appropriate):
The required courses BUS 10 (0.5 credit) and BUS 11 (0.5 credits) will be replaced with BUS 10 (1 credit).

(BUS 10 will be planned for the first semester of the Freshman Year; this is illustrated in the attached Catalog Changes.)

Further, in 2009, International Business was made a required course and the number of elective hours was reduced to 9 (DC#0333-2009-BUS-000-00). However, it was identified as BUS 422 (not possible for a required undergraduate course). BUS 375 (International Business) had been established in 2008 (CC File#7357-2008-BUS-375-10). The CAPS reports show BUS 375 as required. The Catalog does not seem to have been updated, however. To clarify it, the following is offered:
BUS 375-International Marketing is a required course in this B.S.
The number of credits of free electives is 9 hours.
This is illustrated in the catalog changes.

Recommended by Department: ___________________________ Date: 2/5/13
(Chair signature)

Recommended by DSCC: ___________________________ Date: 2/5/13
(Chair signature)

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

Approved by Faculty Senate: ___________________________ Date: ______
(Chair signature)
The following changes are for the Undergraduate Catalog, currently on pp. 74 ff.

Current Wording

**Business and Management Systems**

**Bachelor of Science**

Business and Management Systems is an undergraduate degree based on broad, foundational core courses. Professionals in this field analyze organizational needs to provide technology-enabled management and operations.

Today's business environments have a critical need for professionals who have an understanding of information technologies; who feel comfortable in an electronic environment; and who are able to synthesize, analyze, and learn from vast amounts of information. These individuals are needed to realize technology's great potential to support business processes, decisionmaking, and communication.

As a business and management systems major, you will take courses that are rigorous and oriented toward building the foundation necessary for lifetime learning. Studying at Missouri's technological university, you will benefit from the world-class computer environment and your association with excellent students from around the country and the world. Students in the program are strongly encouraged to participate in summer internships or co-ops with companies before they graduate. There are many opportunities and students benefit greatly in terms of their education and the edge they have seeking full-time employment once they graduate.

**Faculty**

**Professor:**
Bonnie Bachman, Ph.D., Rutgers, The State University of New Jersey
Caroline Fisher (Emeritus), Ph.D., Bowling Green State University
Keng Siau, (Chair), Ph.D., University of British Columbia

**Associate Professor:**
Ray Kluczny (Emeritus), Ph.D., Arizona State University
Cassandra Elrod, Ph.D., University of Missouri-Rolla
Lili Eng, Ph.D., University of Michigan
Nobu Fukawa, Ph.D., Louisiana State University

Revised Wording

**Business and Management Systems**

**Bachelor of Science**

[This paragraph is unchanged.]

Today's business environments have a critical need for professionals who have an understanding of information technologies; are capable of operating in an electronic environment; and are able to synthesize, analyze, and learn from vast amounts of information. These individuals are needed to realize technology's great potential to support business processes, decision making, and communication.

[This paragraph is unchanged.]

**Faculty**

**Professors:**
Caroline Fisher (Emeritus), Ph.D., Bowling Green State University
Barry Flachsbart, Ph.D., Stanford University
Richard Hall, Ph.D., Texas Christian University
Mike Hilgers, Ph.D., Brown University
Fiona Nah, Ph.D., University of British Columbia
Keng Siau, (Chair), Ph.D., University of British Columbia

**Associate Professors:**
Ray Kluczny (Emeritus), Ph.D., Arizona State University
Bih-Ru Lea (Director of Center for ERP), Ph.D., Clemson University
Hong Sheng, Ph.D., University of Nebraska-Lincoln
Bachelor of Science
Business and Management Systems
In Business and Management Systems, the Bachelor of Science degree consists of 120 credit hours. First, all undergraduate students in Business and Management Systems are required to complete a prescribed General Education Requirements Core that corresponds to the recommendations of the Missouri State Coordinating Board for Higher Education and consists of 54 credit hours in the areas of Natural Systems, Human Institutions, Quantitative Skills, and Communication Skills. In addition, all undergraduate students are required to complete a 27 credit hour core consisting of courses in Information Technology, Management, and Entrepreneurship. A minimum grade of "C" is required for courses in these areas. Finally, the degree includes 12 credit hours of free electives.

The remaining 27 credit hours of the required 120 credit hours for the Business and Management Systems degree are divided into a prescribed 15 credit hour degree core and 12 credit hours of degree specific electives. A minimum grade of "C" is required in these courses. The electives for this degree are then chosen from business-related upper-level courses.

### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Psych 50 General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Bus 10 Introduction to College Success I</td>
<td>.5</td>
</tr>
<tr>
<td>English 20 Exposition &amp; Argumentation</td>
<td>3</td>
</tr>
<tr>
<td>Math 4 College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective</td>
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</tr>
<tr>
<td>Laboratory w/ Science Elective</td>
<td>1</td>
</tr>
<tr>
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<tr>
<th>Second Semester</th>
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</tr>
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<tbody>
<tr>
<td>Bus 11 Introduction to College Success II</td>
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<tr>
<td>Bus 110 Mgt &amp; Org Behavior</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
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Vincent Yu, Ph.D., University of Louisville
Assistant Professors:
Craig Claybaugh, Ph.D., University of Wisconsin-Milwaukee
Cassandra Elrod, Ph.D., University of Missouri-Rolla
Lili Eng, Ph.D., University of Michigan
Nobuyuki Fukawa, Ph.D., Louisiana State University
Ralph Hanke, Ph.D., Pennsylvania State University
Ying Chou Lin, Ph.D., Old Dominion University
Nicholas Lockwood, Ph.D., Indiana University
Sarah Stanley, Ph.D., St. Louis University
Assistant Teaching Professor:
Yu-Hsien Chiu, M.S., University of Wisconsin-Milwaukee
Adjunct Instructors:
Eric Anderson, J.D., University of Missouri-Columbia
Edward Harvey, M.B.A., University of Missouri-Columbia
Kellie Kowalski, M.B.A., Northern Arizona University
Gina Mowery, M.A., University of Phoenix
Robert Berry, Ph.D., University of Kansas
Darryl Brinkmann, M.A., Sangamon State University

Bachelor of Science
Business and Management Systems

[The first paragraph is unchanged.]

The remaining 27 credit hours of the required 120 credit hours for the Business and Management Systems degree are divided into a prescribed 18 credit hour degree core and 9 credit hours of degree specific electives. A minimum grade of "C" is required in these courses. The electives for this degree are then chosen from business-related upper-level courses.

### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Psych 50 General Psychology</td>
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<td>Bus 10 Introduction to College Success I</td>
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<tr>
<td>Bus 110 Introduction to Management and Entrepreneurship</td>
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<td>English 20 Exposition &amp; Argumentation</td>
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<td>Laboratory w/ Science Elective</td>
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<tr>
<td>Math 4 College Algebra</td>
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<tr>
<td>IST 50 Intro to Management Information</td>
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### Sophomore Year

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<td>BUS 120 Financial Accounting</td>
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<td>Econ 122 Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>Stat 211 Stat Tools for Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>IST 51 Implementation of IS I</td>
<td>3</td>
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<tr>
<td>Fine Art, Social Science, or Humanities Elective</td>
<td>3</td>
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<td>IST 151 Implementation of IS II</td>
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<td><strong>Total Credits</strong></td>
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<table>
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<th>Second Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>English 65 or Tech Com 65 Intro to Tech Com</td>
<td>3</td>
</tr>
<tr>
<td>Speech 85 Princ of Speech</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Fine Art, Social Science, or Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>IST 151 Implementation of IS II</td>
<td>3</td>
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<tr>
<td><strong>Total Credits</strong></td>
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### Junior Year

<table>
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<th>First Semester</th>
<th>Credit</th>
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<td>ERP 246 Introduction to ERP</td>
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<td>Finance 250 Corporate Finance I</td>
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<td>Bus 320 Managerial Accounting</td>
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<td>Bus 230 Business Law</td>
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<td>Econ 211 Intro to Econ Stat</td>
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### Senior Year

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A grade of "C" or better is required in the following courses for graduation: Bus 10, Bus 11, Bus 397, Bus 398, IST 50, IST 51, IST 151, ERP 246, Bus 110, Bus 120, Bus 230, Econ 121, Econ 122, Mktg 311, Fin 250, Bus 360, Bus 320, Bus 380, and Econ 211.

### Senior Year

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Bus 230 Business Law</td>
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<td>Bus 360 Business Operations</td>
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<table>
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<tr>
<td>Bus 396 Business Models for Entrepreneurship and Innovation</td>
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<tr>
<td>Bus 375 International Business</td>
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<tr>
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<td>Free Elective</td>
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<tr>
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</table>

A grade of "C" or better is required in the following courses for graduation: Bus 10, Bus 396, IST 50, IST 51, IST 151, ERP 246, Bus 110, Bus 120, Bus 230, Econ 121, Econ 122, Mktg 311, Fin 250, Bus 360, Bus 320, Bus 375, Bus 380, and Econ 211.
Areas of Concentration

All students are required to complete twelve credit hours chosen from 200 or 300 level courses in business, economics, finance, enterprise resource planning, or information science & technology. A "C" or better is required in all twelve credit hours. If the student chooses to designate an area of concentration for these courses, focusing at least 3 courses (9 credits) in one area, he or she may do so. Students are not required to choose a concentration area. Areas of concentration are:

E-Commerce

IST 352 - Advanced Web Development
IST 241 - E-Commerce
IST 286 - Web & New Media Development
IST 336 - Internet Computing
IST 342 - E-Commerce Architecture
IST 357 - Network Economy
IST 368 - Law and Ethics in E-Commerce

Enterprise Resource Planning

ERP 342 - Customer Relationship Management
ERP 345 - Use of Business Intelligence
ERP 346 - ERP Systems Design and Implementation
ERP 347 - Supply Chain Management
ERP 348 - Strategic Enterprise Management Systems
ERP 349 - ERP Systems Administration

Finance

Fin 350 - Corporate Finance II
Fin 260 - Investments I
Fin 360 - Investments II
Any other 300-level Finance course
Econ 323, 330, 337, Math 337, or Finance 330 cannot be used toward this specialization

Human-Computer Interaction

IST 354 - Multimedia Development & Design
IST 385 - Human Computer Interaction
IST 386 - Human-Computer Interaction Prototyping
IST 387 - Human-Computer Interaction Evaluation

Management

BUS 315 - Intro to Teambuilding and Leadership

This paragraph is unchanged.

E-Commerce

IST 352 - Advanced Web Development
IST 241 - Electronic and Mobile Commerce
IST 286 - Web & New Media Development
IST 336 - Internet Computing
IST 342 - E-Commerce Architecture
IST 357 - Network Economy
IST 368 - Law and Ethics in E-Commerce

Enterprise Resource Planning

Any 9 hours of ERP-designated courses at the 300-level.

This concentration is unchanged.

Human-Computer Interaction

IST 354 - Advanced Web and Digital Media Development
IST 385 - Human Computer Interaction
IST 386 - Human-Computer Interaction Prototyping
IST 387 - Human-Computer Interaction Evaluation

Management

BUS 315 - Intro to Teambuilding and Leadership
BUS 330 - Foundations of Sustainable Business
BUS 370 - Human Resource Management
Any other 300-level Management course

Marketing
Mkt 380 - Marketing Strategy
Mkt 350 - New Product Development
Bus 311 - Business Negotiations
Any other 300-level Marketing course

Minors
You must see the department advisor and complete a minor application before beginning your minor. Requirements change over time. You will be held to the requirements in force at the time you apply for the minor. Postponing your application for the minor may result in you having to take additional courses to complete the minor. At least six (6) hours of the minor course work must be taken in residence at Missouri S&T.

Minor in Business
A minor in Business and Management Systems* requires the following 15 hours of course work:
1) Fin 250-Corporate Finance I
2) Econ 121-Principles of Microeconomics or Econ 122- Principles of Macroeconomics
3) Bus 110-Management & Organizational Behavior
4) Bus 120-Financial Accounting
5) Mkt 311-Basic Marketing

Minor in Enterprise Resource Planning (ERP)
A minor in ERP* requires the following 15 hours of course work:
1) Bus 120-Financial Accounting
2) ERP 246-Introduction to ERP
3) ERP 346-ERP Systems Design and Implementation
AND 6 hours of electives in ERP chosen from the following:
1) ERP 345-Use of Business Intelligence
2) ERP 347-Supply Chain Management Systems
3) ERP 348-Strategic Enterprise Management Systems
4) ERP 349-ERP System Administration

Minor in Finance
A minor in Finance* requires the following 15 hours of course work:
1) Econ 121-Principles of Microeconomics or Econ 122 Principles of Macroeconomics
2) Fin 250-Corporate Finance I
And 9 hours of Fin courses at the 300-level (FIN 390, Undergraduate Research, is acceptable).

BUS 370 - Human Resource Management
BUS 311 - Business Negotiations
IST 351 - Technological Innovation Management and Leadership

Marketing
MKT 321 - Consumer Behavior
MKT 331 - Digital Marketing and Promotions
MKT 350 - Customer Focus and Satisfaction
MKT 380 - Marketing Strategy
ERP 342 - Customer Relationship Management in an ERP Environment

Minors
(This paragraph is unchanged)

Minor in Business
A minor in Business and Management Systems* requires the following 15 hours of course work:
1) Fin 250-Corporate Finance I
2) Econ 121-Principles of Microeconomics or Econ 122- Principles of Macroeconomics
3) Bus 110- Introduction to Management and Entrepreneurship
4) Bus 120-Financial Accounting
5) Mkt 311-Basic Marketing

Minor in Enterprise Resource Planning (ERP)
A minor in ERP* requires the following 15 hours of course work:
1) Bus 120-Financial Accounting
2) ERP 246-Introduction to ERP
3) ERP 346-ERP Systems Design and Implementation
AND 6 hours of electives from any other ERP-designated courses at the 300-level.

[This Minor is unchanged.]
Minor in Marketing
A minor in Marketing* requires the following 15 hours of course work:
1) Econ 121-Principles of Microeconomics or Econ 122-Principles of Macroeconomics
2) MKT 311-Marketing
3) 9 hours of electives in Marketing approved by the department

Sustainable Business
A minor in Sustainable Business* requires the following 15 hours of course work:
1) Buss 110-Management and Organizational Behavior
2) Bus 330-Foundations of Sustainable Business
3) Bus 315-Teambuilding and Leadership in a Business Setting
4) And two courses from the following:
   ERP 348, EnvE 360, EnvE 365, Psych 315, Econ 340, Econ 355, Pol Sci 350, and Hist 361

Pre MBA Minor
A minor in Pre MBA* will prepare students to enter an accredited MBA program at Missouri S&T or elsewhere. This minor requires the following 39 hours of course work:
1) Psych 50-General Psychology
2) Math 8-Calculus with Analytic Geometry I, Math 12-Business Calculus, or Math 14-Calculus for Engineers I
4) Econ 121-Principles of Microeconomics
5) Econ 122-Principles of Macroeconomics
6) Bus 110-Management and Organizational Behavior
7) Bus 120-Financial Accounting or Eng Mg 322-Accounting for Engineering Management
8) Bus 320-Managerial Accounting
9) Bus 230-Business Law or Eng Mg 327-Legal Environment
10) Mkt 311-Basic Marketing or Eng Mg 251-Marketing Management
11) Fin 250-Corporate Finance I or Eng Mg 252-Financial Management
12) Bus 360-Business Operations or Eng Mg 282-Operations and Production Management
13) IST 50-Information Systems or Eng Mg 333-Management Information Systems

*[At least 6 hours of the minor course work must be taken in residence at Missouri S&T.]

Minor in Marketing
A minor in Marketing* requires the following 15 hours of course work:
1) Econ 121-Principles of Microeconomics or Econ 122-Principles of Macroeconomics
2) MKT 311-Marketing
3) 9 hours from the following list:
   a) MKT 321-Consumer Behavior
   b) MKT 331-Digital Marketing and Promotions
   c) MKT 350-Customer Focus and Satisfaction
   d) MKT 380-Marketing Strategy
   e) ERP 342-Customer Relationship Management in an ERP Environment
   f) Other Marketing electives approved by the department (MKT 300 and above).

[This Minor is deleted.]

[This Minor is unchanged]
Minor in Entrepreneurship
A minor in Entrepreneurship requires the following 15 hours of course work:
1) BUS 110-Introduction to Management and Entrepreneurship
2) BUS 396-Business Models for Entrepreneurship and Innovation
3) MKT 331-Digital Marketing and Promotions
And two courses from the following:
1) BUS 350-Customer Focus and Satisfaction
2) BUS 380-Strategic Management
3) IST 241-Electronic and Mobile Commerce
4) IST 285-Web and Digital Media Development
5) IST 335-Fundamentals of Mobile Technology for Business
6) IST 351-Technological Innovation Management and Leadership
7) IST 386-Human-Computer Interaction Prototyping
8) Eng Mgt 320-Technical Entrepreneurship
9) Eng Mgt 374-Engineering Design Optimization

Minor in Electronic and Social Commerce
A minor in Electronic and Social Commerce requires the following 15 hours of course work:
1) IST 241-Electronic and Mobile Commerce
And four courses from the following:
1) IST 335-Fundamentals of Mobile Technology for Business
2) IST 351-Technological Innovation Management and Leadership
3) IST 352-Advanced Web Development
4) IST 368-Law and Ethics in E-Commerce
5) IST 385-Human-Computer Interaction
6) IST 386-Human-Computer Interaction Prototyping
7) MKT 331-Digital Marketing and Promotions
8) MKT 380-Marketing Strategy
Effective Year: 2013  Effective Term: Summer ☐ Fall ☑ Spring ☐
(Creating or modifying a degree program must be effective for a Fall term.)

Degree Change Form (DC)
This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:
B.S. in Information Science and Technology

Department: Business and Information Technology

Briefly describe action requested (attach documentation as appropriate):
The required courses BUS 10 (0.5 credit) and BUS 11 (0.5 credits)
will be replaced with BUS 10 (1 credit).

(BUS 10 will be planned for the first semester of the Freshman Year; this is illustrated on the attached Catalog Changes.)

Recommended by Department: [Signature]  Date: 2/5/13

Recommended by DSCC: [Signature]  Date: 2/13/13

Approved by Curricula Committee: [Signature]  Date: 

Approved by Faculty Senate: [Signature]  Date: 

Revised November 2012
The following changes are for the Undergraduate Catalog, currently on pp. 178 and 179.

Current Wording

Information Science and Technology
Bachelor of Science
Master of Science
Information Science and Technology offers a bachelors degree focused on today's cutting-edge information technology. Students in Information Science and Technology study the latest technology in areas including networking, database management systems, telecommunications, enterprise resource planning, human-computer interaction, E-commerce, and integrated business systems. Professionals in this field administer, maintain, and support computer systems and networks.

Today's business environments have a critical need for professionals who have an understanding of information technologies based on a broad knowledge of management practices, economics, psychology, and the humanities. These individuals are needed to implement technology to support business processes, managerial decision-making, and organizational communication.

As an information science and technology major, you will take courses that are rigorous and oriented toward building the foundation necessary for lifetime learning. Studying at Missouri's technological university, you will benefit from the world-class computer environment and your association with excellent students from around the country and the world. Students in the program are strongly encouraged to do summer internships or co-ops with companies before they graduate. There are many rich opportunities and students benefit greatly in terms of their education and the edge they have seeking full-time employment once they graduate.

Faculty
Professor:
Arlan DeKock (Emeritus), Ph.D., University of South Dakota
Caroline Fisher (Emeritus.), Ph.D., Bowling Green State University
Barry Flachsbart, Ph.D., Stanford University
Richard Hall, Ph.D., Texas Christian University
Mike Hilgers, Ph.D., Brown University

Revised Wording

[These paragraphs are unchanged]

Faculty
Professors:
Arlan DeKock (Emeritus), Ph.D., University of South Dakota
Barry Flachsbart, Ph.D., Stanford University
Richard Hall, Ph.D., Texas Christian University
Mike Hilgers, Ph.D., Brown University
Fiona Nah, Ph.D., University of British Columbia
Keng Siau, (Chair), Ph.D., University of British Columbia
Bachelor of Science
Information Science and Technology

In Information Science and Technology, the Bachelor of Science degree consists of 120 credit hours. First, all undergraduate students in Information Science and Technology are required to complete a prescribed General Education Requirements Core that corresponds to the recommendations of the Missouri State Coordinating Board for Higher Education and consists of 54 credit hours in the areas of Natural Systems, Human Institutions, Quantitative Skills, and Communication Skills. In addition, all undergraduate students are required to complete a 27 credit hour core consisting of courses in Information Technology, Management, and Entrepreneurship. A minimum grade of "C" is required for courses in these areas. Finally, the degree includes 12 credit hours of free electives.

The remaining 27 credit hours of the required 120 credit hours for the Information Science and Technology degree are divided into a prescribed 18 credit hour degree core and 9 credit hours of specific degree electives. A minimum grade of "C" is required in these courses. The Information Science and Technology Degree requires courses in Database Management, Systems Analysis, Web and Digital Media Development, Computing Internals, Networks and Communications, and E-Commerce. The electives for this degree consist of advanced coursework in the areas introduced by the required courses.

F13 IST UG Catalog Changes Attachment - Page 2
### FRESHMAN YEAR

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<td>Math 4-College Algebra</td>
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<td>Bus 11-Introduction to College Success II</td>
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<td>IST 51-Implementation of IS I</td>
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### SOPHOMORE YEAR

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<td>Speech 85-Principles of Speech</td>
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<td>Stat 211-Statistical Tools for Decision Making</td>
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<td>IST 151-Implementation of IS II</td>
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<td>Second Semester</td>
<td>BUS 120-Financial Accounting</td>
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<td>Econ 122-Macro Economics</td>
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<td>Mktg 311-Basic Marketing</td>
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<td>ERP 246-Introduction to ERP</td>
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### JUNIOR YEAR

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<td>Fin 250-Corporate Finance</td>
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<td>IST 233-Networks and Communications</td>
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<td>IST 223-Database Management</td>
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<td>Second Semester</td>
<td>Speech or Tech Com Elective</td>
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<td>Pol Sci 90-American Government</td>
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<td>IST 243-Systems Analysis</td>
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<td>IST 231-Comp Inter &amp; Operating Systems</td>
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<td>IST 241-E-Commerce</td>
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### SENIOR YEAR

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<td>Bus 397-Senior Design I</td>
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<td>English 260 or Tech Com 260-Practicum in</td>
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<td>Bus 398-Senior Design II</td>
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### JUNIOR YEAR

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<td>Fin 250-Corporate Finance</td>
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<td>IST 233-Networks and Communications</td>
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<tr>
<td>Second Semester</td>
<td>IST 243-Systems Analysis</td>
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<td>MKT 311-Basic Marketing</td>
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<td>Second Semester</td>
<td>BUS 396-Business Models for Entrepreneurship</td>
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<td>and Innovation</td>
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<td>Pol Sci 90-American Government</td>
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</tbody>
</table>
A grade of "C" or better is required in the following courses for graduation: Bus 10, Bus 11, Bus 397, Bus 398, IST 50, IST 51, IST 151, ERP 246, Bus 110, Bus 120, Mktg 311, Fin 250, Econ 121, Econ 122, IST 286, IST 223, IST 231, IST 233, IST 241, and IST 243.

Writing Intensive Course
2 Any Biology, Chemistry, Geology, Geological Engineering, Physics.
3 Any course in the following areas not used for other degree requirements: Art, Economics, English, Foreign Language, History, Literature, Music, Philosophy, Political Science, Psychology, Sociology, Theater.

A grade of "C" or better is required in IST Electives and Emphasis Area courses for graduation. Students choosing the Human-Computer Interaction Emphasis Area must take IST 385, 386, and 387. Students choosing the Enterprise Resource Planning Emphasis Area must take ERP 346, 347, and 348. Students who choose no Emphasis Area must take three courses from: IST 300-level, Csc 317, Csc 319.

Math 002 may be substituted for Math 004.

Emphasis Areas
Two Emphasis Areas may be taken to specialize if the student wishes to do so. The first, Human-Computer Interaction, consists of three courses:
IST 385-Human-Computer Interaction
IST 386-HCI Prototyping
IST 387-HCI Evaluation
The second Emphasis Area, Enterprise Resource Planning, consists of three courses:
ERP 346-ERP Systems Planning & Design
ERP 347-Supply Chain Management Systems
ERP 348-Strategic Enterprise Management Systems

Minors
You must see the department advisor and complete a minor application before beginning your minor. Requirements change over time. You will be held to the requirements in force at the time you apply for the minor. Postponing your application for the minor may result in you having to take additional courses to complete the minor. At least six (6) hours of the minor course work must be taken in residence at Missouri S&T.

Minor in Enterprise Resource Planning (ERP)
A minor in ERP requires the following 15 hours of course work:

IST Elective or Emphasis Area
Free Electives

A grade of "C" or better is required in the following courses for graduation: Bus 10, Bus 396, IST 50, IST 51, IST 151, ERP 246, Bus 110, Bus 120, Mktg 311, Fin 250, Econ 121, Econ 122, IST 286, IST 223, IST 231, IST 233, IST 241, and IST 243.

Writing Intensive Course
2 Any course in the following areas: Biology, Chemistry, Geology, Geological Engineering, Physics.
3 Any course in the following areas not used for other degree requirements: Art, Economics, English, Foreign Language, History, Literature, Music, Philosophy, Political Science, Psychology, Sociology, Theater.

A grade of "C" or better is required in IST Electives and Emphasis Area courses for graduation. Students choosing the Human-Computer Interaction Emphasis Area must take IST 385, 386, and 387. Students choosing the Enterprise Resource Planning Emphasis Area must take ERP 346, 347, and 348. Students who choose no Emphasis Area must take three courses from: IST 300-level, Csc 317, Csc 319.

Math 002 may be substituted for Math 004.

Emphasis Areas
Two Emphasis Areas may be taken to specialize if the student wishes to do so. The first, Human-Computer Interaction, consists of three courses:
IST 385-Human-Computer Interaction
IST 386-HCI Prototyping
IST 387-HCI Evaluation
The second Emphasis Area, Enterprise Resource Planning, consists of any 9 hours of ERP-designated courses at the 300-level.

Minor in Enterprise Resource Planning (ERP)
A minor in ERP requires the following 15 hours of course work:

This paragraph is correct.
1) Bus 120-Financial Accounting
2) ERP 246-Introduction to ERP
3) ERP 346-ERP Systems Design and Implementation
AND 6 hours of electives in ERP chosen from the following:
1) ERP 345-Use of Business Intelligence
2) ERP 347-Supply Chain Management Systems
3) ERP 348-Strategic Enterprise Management Systems
4) ERP 349-ERP System Administration

Minor in Information Science and Technology
A minor in Information Science and Technology will require 15 hours of courses:
1) IST 50-Information Systems
2) IST 51-Implementation of IS I
3) IST 151-Implementation of IS II
4) ERP 246-Intro to Enterprise Resource Planning
5) Any IST or ERP course at the 200 or 300 level.

[This Minor is correct, but the word "will" should be removed.]

Minor in Mobile Business and Technology
A minor in Mobile Business and Technology requires 15 hours of courses:
1) IST 241-Electronic and Mobile Commerce
2) IST 335-Fundamentals of Mobile Technology for Business
3) ERP 341-Enterprise Portal and Mobile Application Development
AND 6 hours of electives chosen from the following:
1) IST 233-Introduction to Telecommunications Networks
2) IST 352-Advanced Web Development
3) IST 386-Human-Computer Interaction Prototyping
4) ERP 342-Customer Relationship Management in an ERP Environment
5) ERP 347-Supply Chain Management Systems in an ERP Environment
6) ERP 348-Performance Dashboard, Scorecard, and Data Visualizations

[The Minor below has been added / is being added.]
Effective Year: 2013  Effective Term: Summer ☐ Fall ☒ Spring ☐
(Creating or modifying a degree program must be effective for a Fall term.)

Degree Change Form (DC)
This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:
Military Science Minor

Department: Military Science - Army Rotc

Briefly describe action requested (attach documentation as appropriate):
Remove Elected Course Options:
  History 348 Recent United States History
  Philosophy 025 Ethics of Engineering Practice
  Sociology 081 General Sociology

Add Elected Course Options:
  History 380 20th Century Americans in Combat
  History 384 American Diplomatic History Since World War II
  Philosophy 010 Practical Reasoning

Recommended by Department: [Signature] Date: 23 Jan 13

Recommended by DSCC: [Signature] Date: 1/29/13

Approved by Curricula Committee: [Signature] Date: 

Approved by Faculty Senate: [Signature] Date: 

Revised November 2012
Effective Year: 2013
Effective Term: Summer ☐ Fall ☑ Spring ☐
(Creating or modifying a degree program must be effective for a Fall term)

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:
Science, Technology, and Humanity

Department: History and Political Science

Briefly describe action requested (Attach documentation as appropriate):
Modifying currently offered Science, Technology, and Politics minor to a broader and more inclusive minor that incorporates more relevant courses from across campus. 15 credit hours total.

Science, Technology and Humanity Minor
Students must take one of the following:
Hist 111, Hist 112, Hist 175, Hist 176, PolSci 90

Students must take one of the following:
Hist 270, Hist 275

Students must take three of the following (9 cr. hrs.) as approved by minor advisor:
Bio 150, Bio 251, Econ 345, Econ 375, EMgt 311, Engl 225, EnvEng 360, GeoEng 75, Hist 270, Hist 271, Hist 275,
Hist 280, Hist 361, Hist 375, IST 351, IST 385, Phil 223, Phil 225, Phil 320, Phil 345, Phil 350, PolSci 315, Psych 307,
Psych 311, Psych 314, TCom 361

Exact wording for the catalogue description is attached.

Recommended by Department: [Signature]
Date: 1/23/13

Recommended by: [Signature]
Date: 1/31/13
Discipline Specific Curricula Committee

Approved by Curricula Committee: [Signature]
Date: 

Approved by Faculty Senate: [Signature]
Date: 

01/23/13

(Revised 9/12/2011)
Science, Technology and Humanity
Minor Degree Program

This will replace the currently offered Science, Technology and Politics minor.

Catalogue Description:

The Science, Technology and Humanity (STH) minor is designed for students who want to explore the relationship between history, the humanities, and science and technology. The minor is particularly useful for technologically oriented students, because it provides insight into humanities and social science disciplines. It also shows how these disciplines interact with science and technology, thereby broadening their horizon of thought and action and preparing them for an increasingly technologically oriented future. To minor in STH the student must complete one of the following survey courses: History 111 or 112 or 175 or 176 or Political Science 90. The student then must take either History 270 or 275. After completing the required six hours, the student will select 9 additional hours from the list below.

15 credit hours total.

Students must take one of the following:

Hist 111, Early Western Civilization
Hist 112, Modern Western Civilization
Hist 175, American History to 1877
Hist 176, American History since 1877
PolSc 90, American Government

Students must take one of the following:

Hist 270, History of Technology
Hist 275, History of Science

Students must take three of the following (9 cr. hrs. total) as approved by minor advisor:

Bio 150, Biotechnology in Film
Bio 251, Ecology
Econ 355, Energy Economics
Econ 375, Labor Economics
EMgt 311, Human Factors (co-listed with Psych 311)
Engl 225, Science Fiction and Fantasy Literature
EnvEng 360, Environmental Law and Regulation
GeoEng 75, Geological Engineering in Popular Media
Hist 270, History of Technology
Hist 271, Twentieth Century Technology and Society
Hist 275, History of Science
Hist 280, The American Military Experience
Hist 361, American Environmental History
Hist 375, Architecture, Technology, and Society, 1750-present
IST 351, Leadership in Technology Based Organizations
IST 385, Human Computer Interaction
Phil 223, Bioethics
Phil 225, Engineering Ethics
Phil 320, Minds and Machines
Phil 345, Philosophy of Science
Phil 350, Environmental Ethics
PolSc 315, Principles of Public Policy
Psych 307, Industrial Psychology
Psych 311, Human Factors (co-listed with EMgt 311)
Psych 314, Human Computer Interaction
TCom 361, History of Technical Communication
Science, Technology and Politics Minor

The Science, Technology and Politics (STP) minor is designed for students who want to explore the relationship between history, political science, and science and technology. The minor is particularly useful for technologically oriented students, because it provides insight into humanities and social science disciplines and how these disciplines interact with science and technology, thereby broadening their horizon of thought and action and preparing them for an increasingly technologically oriented future. To minor in STP the student must complete one of the following history survey courses: 111 or 112 or 175 or 176; and Political Science 90. After completing the required six hours, the student will select one of two options: The History of Science and Technology option; or the Politics and Public Policy option. Under the History of Science and Technology option, students will complete six additional hours from courses in history plus three hours in political science. Under the Politics and Public Policy option students will complete six additional hours in political science and three hours from history. The upper-level courses to satisfy degree requirements are as follows: HIST 270, 271, 274, 275, 280, or PHIL 345 and POL SC 237, 315, 317, and 325.

History Courses

10 Introduction to History (LEC 1.0) This required course for history majors will introduce them to the study of history, the various fields of history, and the current faculty. The course will also introduce students to the research methods of historians.

100 Special Problems (IND 0.0-6.0) Problems or readings on specific subjects or projects in the department. Consent of instructor required.

101 Special Topics (Variable 0.0-5.0) This course is designed to give the department an opportunity to test a new course. Variable title.

110 World Regional Geography (LEC 3.0) An introduction to the distinguishing cultural and physical characteristics of the major regions of the world. Emphasis on the political problems within the regions and the contemporary issues involved.

111 Early Western Civilization (LEC 3.0) Growth and development of ideas and institutions of western culture from prehistoric man to the voyages of discovery.

112 Modern Western Civilization (LEC 3.0) A continuation of History 111 to the present with special emphasis on the philosophical, political, social, and economic backgrounds of modern society.

175 American History To 1877 (LEC 3.0) Survey of the history of the American colonies and United States from colonial times through Reconstruction.
Course Change Form (CC)

This form is for creating or modifying permanent courses.

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

**Course Information** (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.)

1. **Department:** Physics

2. **Discipline and Course Number:** Present: [ ] Proposed: Physics 304

3. **Course Title:** Present:
   - Proposed: Sci Edu and Quantitative Literacy for Middle Sch Teachers
     - Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): Sci Ed & QL Mld Sch

4. **Catalog Description** (360 character spaces or less.)
   - Present:
     - Proposed: An integrated science-mathematics course for middle school teachers. Course covers selected science/mathematics topics/skills specified in Missouri standards for grades 5-7. Inquiry based methods of teaching these topics in an integrated manner will be emphasized.

5. **If course requires field trip check box:** [ ]

6. **Credit Hours:**
   - Present: Lecture Lab Total
   - Proposed: Lecture 3 Lab 0 Total 3

7. **Prerequisites:**
   - Present:
     - Proposed: Current enrollment in a Teacher Education Program or a full or part-time teacher in a K-12 School

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

9. **Justification:** This is a specialized course for the K-12 Teacher participants of the summer SEQL program grant funded.

10. **Semesters previously offered as an experimental course (101, 201, 301, 401):** SS12, SS11

11. **List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.**
    - 1) Stat 304 [x] 3) [ ] 5) [ ]
    - 2) [ ] 4) [ ] 6) [ ]

**Recommended by Department**

(Chair signature) Date: 1-18-13

**Recommended by DSCC**

(Chair signature) Date: 2-6-2013

**Approved by Curricula Committee:**

(Chair signature) Date: 

**Approved by Faculty Senate:**

(Chair signature) Date: 

(Revised December 2012)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

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

Course Information
(1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: History & Political Science  
   Proposed: History
2. Discipline and Course Number: Present: Hist 270  
   Proposed: History of Technology
3. Course Title: Present: History of Technology to 1900  
   Proposed: History of Technology
   Abbreviated Course Title: History of Technology
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. Catalog Description (300 Character Spaces or Less.)
   Present: Technological achievements from prehistoric times to 1900; topics include agriculture, building and construction, communications, transportation, power sources, the Industrial Revolution, relationships between science and technology, factors in invention and innovation and sociocultural effects.
   Proposed: Technological achievements from prehistoric times to present; topics include agriculture, building and construction, communications, transportation, power sources, the Industrial Revolution, relationships between science and technology, factors in invention and innovation and sociocultural effects.
5. If course requires field trip check box: □
6. Credit Hours:
   Present: Lecture: 3.0 Lab: 0 Total: 3
   Proposed: Lecture: Total:
7. Prerequisites:
   Present: Prerequisite: Hist 111 or 112 or 175 or 176.
   Proposed:
8. Required for Majors: □  Elective for Majors: □
9. Justification: Aligning title with what is taught in the course and how course is structured.

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

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

Date: 1-22-13
Date: 1-23-13

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Effective Year: 2013
Term: Summer □ Fall [✓] Spring □

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

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

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)
1. Department: ALP
2. Discipline and Course Number: Present: ALP
   Proposed: 397
3. Course Title: Present:
   Proposed: Multidisciplinary Studies Capstone
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
   Present:

   Proposed: Individually designed by the student and advisor with the approval of the advisory committee, this course is to reflect the student's ability to synthesize methods and knowledge from each focus area in his/her program into an academically coherent product.

5. If course requires field trip check box: □
6. Credit Hours:
   Present: Lecture: Lab: Total: 3
   Proposed: Lecture: 3 Lab: 0 Total: 3
7. Prerequisites:
   Present:
   Proposed: Senior status
8. Required for Majors: [✓] Elective for Majors: □
9. Justification:
   This is the final course in the Bachelor of Multidisciplinary Studies degree program.

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

Recommended by Department

Recommended by Discipline Specific Curricula Committee

Approved by Curricula Committee:

Approved by Faculty Senate:

Date: Jun 23, 2013
Date: Jan 23, 2013
Date: 
Date: 

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

This form is for creating or modifying permanent courses.

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

**Course Information** (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.)

1. Department: **Business and Information Technology**
2. Discipline and Course Number: Present: [ ] Proposed: **MKT 321**
3. Course Title: Present:
   - Proposed: **Consumer Behavior**
     Abbreviated Course Title (24 Spaces or less. Only needed for New Courses or Title Changes.):
4. Catalog Description (360 character spaces or less.)
   Present:
   - Proposed: **Introduces and applies important concepts, principles, and theories to understand consumer decision-making processes in the purchase, usage and disposal of goods and services. Examines the influence of cultural, social, and psychological factors on consumer behavior.**
5. If course requires field trip check box: [ ]
6. Credit Hours:
   - Present: Lecture 3  Lab 0  Total 3
   - Proposed: Lecture  Lab  Total
7. Prerequisites:
   Present:
   - Proposed: **MKT 311**
8. Required for Majors: [ ]  Elective for Majors: [x]
9. Justification: **Offered twice as MKT 301**
10. Semesters previously offered as an experimental course (101, 201, 301, 401): **Sp12, Sp13**
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1) 2) 3) 4) 5) 6)

**Signatures**

Recommended by Department: [Signature]  Date: 1/25/13

Recommended by DSCC: [Signature]  Date: 1/30/13

Approved by Curricula Committee: [Signature]  Date:________

Approved by Faculty Senate: [Signature]  Date:________

(Revised October 2012)
Effective Year: 2013   Effective Term: Summer ☑   Fall ☑   Spring ☐

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

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

Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business and Information Technology

2. Discipline and Course Number: Present:   Proposed: BUS 10

3. Course Title: Present: Introduction to College Success I
   Proposed: Introduction to College Success
   Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): Intro to College Success

4. Catalog Description (360 character spaces or less.)
   Present: Students learn essential skills for success in Business and Information Technology. The course creates a sense of community in the department and prepares the students for the business world.
   Proposed: This course teaches essential skills for success in Business and Information Technology and a student's future career. The course creates a sense of community in the department and prepares the student for the business world.

5. If course requires field trip check box: ☐

6. Credit Hours: Present: Lecture 0   Lab 0.5   Total 0.5
   Proposed: Lecture 1   Lab 0   Total 1

7. Prerequisites:
   Present:
   Proposed:

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

9. Justification: Change of credit from 1/2 to 1 credit; BUS 11 will become elective and may even be dropped later.

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

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

Recommended by Department ____________________________ Date: 1/30/13
   (Chair signature)

Recommended by DSCC ____________________________ Date: 2/6/13
   (Chair signature)

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

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

(Revised October 2012)
Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved Spring 2009 or later allow the course to be offered twice at any time during the following three year period. After an experimental course has been offered twice, a CC form may be submitted to request a permanent course number.

A new course that is required as part of a degree program, minor, or graduate certificate may be submitted on a CC form to receive a permanent course number.

Co-listed offerings should be submitted on one form, originating from the primary discipline.

Department: Arts, Languages, and Philosophy

Discipline and Course Number: PHILOS 301

Course Title: Theoretical Ethics

Abbreviated Title (24 spaces or less): Theoretical Ethics

Instructor(s): Jonathan Finch

Credit Hours: Lecture 3 Lab 0 Total 3

Prerequisites: A previous course in philosophy or Junior standing

Semester(s) previously taught: 0

Brief Course Description (360 character spaces or less): The course takes an historical approach to ethical theories. It begins with Aristotle, followed by Kant and then Mill. The three primary ethical theories, virtue, outcome based moral reasoning and ethical intent are studied and discussed. No lecture, asynchronous online.

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

1) 3) 5)

2) 4) 6)

Recommended by Department: ____________________________ Date: 5/7/2013

(Chair signature)

Recommended by DSCC: ____________________________ Date: 5/7/2013

(Chair signature)

Approved by Curricula Committee: ____________________________ Date: ___

(Chair signature)

11/2/2012

(Revised October 2012)
Course Change Form (CC)

This form is for creating or modifying permanent courses.

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

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

1. Department: Mining and Nuclear Engineering

2. Discipline and Course Number: Present: Proposed: Exp Eng 411

3. Course Title: Present: Proposed: Research Methods

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

4. Catalog Description (300 Character Spaces or Less.)
Present: Mining 411
Proposed: Foundations, dimensions, and methods for designing and investigating research problems. Focus on fundamentally and applied research, research methods, literature review, experimental design and experimentation, dissertation composition, concepts of originality and intellectual property.

5. If course requires field trip check box:

6. Credit Hours:
   Present: Lecture: Lab: Total:
   Proposed: Lecture: 3 Lab: 0 Total: 3

7. Prerequisites:
   Present: Proposed: Graduate Standing

8. Required for Majors: 
   Elective for Majors: 

9. Justification: We would like to co-list with Mining 411 research methods. It has become apparent that the masters of explosives engineering by research students need to take the class and we will be also including this for our PhD in explosives engineering in application as a required class. Dr. Baird (mining and explosives) has currently reworked min 411 and will teach onsite and distance.

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

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.
   1) Mining 411
   2)
   3)
   4)
   5)
   6)

Recommended by Department: 
[Signature]

Recommended by Discipline Specific Curricula Committee: 
[Signature]

Approved by Curricula Committee: 
[Signature]

Approved by Faculty Senate: 
[Signature]

Date: 10/24/12

Date: 10/29/12

Date: 

Date: 

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

This form is for creating or modifying permanent courses.

**Course Changes**  
(Click all changes.)

- New Course [x]  
- Course Deletion [ ]  
- Credit Hours [ ]  
- Prerequisites [ ]

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

1. Department: Mining and Nuclear Engineering
2. Discipline and Course Number: Present:  
Proposed: Mi Eng 476
3. Course Title: Present:  
Proposed: Sustainability in Mining

Abbreviated Course Title: Sus[In]Mining  
(24 Spaces or Less. Only needed for New Courses or Title Changes.)

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

5. If course requires field trip check box: [ ]

6. Credit Hours:  
Present:  
Lecture:  
Lab:  
Total:
Proposed: Lecture: 3  
Lab: 0  
Total: 3

7. Prerequisites: Present:  
Proposed: Mi Eng 376 or instructor consent

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

9. Justification: This course is a core requirement of the Master of Engineering degree program in Mining Engineering.

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

Recommended by Department  
(Chair signature)  
Date: 11-14-12

Recommended by Discipline Specific Curricula Committee  
(Chair signature)  
Date: 12-19-12

Approved by Curricula Committee:  
(Chair signature)  
Date: 

Approved by Faculty Senate:  
(Chair signature)  
Date: 

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

This form is for creating or modifying permanent courses.

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

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

1. Department: Mining and Nuclear Engineering

2. Discipline and Course Number: Present: Proposed: Mi Eng 424

3. Course Title: Present: Proposed: Underground Mine Design

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

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

   Proposed: This course will focus on the determinants of underground mine design, geomechanical mine design for underground mining; mine optimization; mine environmental systems; and underground mine design and optimization.

5. If course requires field trip check box: ☐

6. Credit Hours: Present: Lecture: 3 Lab: 0 Total: 3

7. Prerequisites: Present: Proposed: Mi Eng 324 or Equivalent

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

9. Justification: This course is a core requirement of the Master of Engineering degree program in Mining Engineering.

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

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

   1) 2) 3) 4) 5)

   Recommended by Department: (Chair signature) Date: 11-14-12

   Recommended by Discipline Specific Curriculum Committee: (Chair signature) Date: 12-19-12

   Approved by Curricula Committee: (Chair signature) Date: 

   Approved by Faculty Senate: (Chair signature) Date: 

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

This form is for creating or modifying permanent courses.

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

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

1. **Department:** Mining and Nuclear Engineering
2. **Discipline and Course Number:** Present: Proposed: Mi Eng 426
3. **Course Title:**
   - Present: Proposed: Surface Mine Design
   - Abbreviated Course Title: Surf Mine Des
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description**
   (300 Character Spaces or Less.)
   - Present:
     - Proposed: This course will focus on the determinants of surface mine design, geomechanical and geometrical mine design for open pit and strip mining; mine layouts optimization; mine environmental systems; and research directions in surface mine design and optimization.

5. **If course requires field trip check box:** □
6. **Credit Hours:**
   - Present: Lecture: 3  Lab: 0  Total: 3
   - Proposed: Lecture: 3

7. **Prerequisites:**
   - Present:
     - Proposed: Mi Eng 326 or Equivalent

8. **Required for Majors:** ☑  **Elective for Majors:** □
9. **Justification:** This course is a core requirement of the Master of Engineering degree program in Mining Engineering.

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

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

   Recommended by Department:
   (Chair signature)
   Date: 11-14-12

   Recommended by Discipline Specific Curriculum Committee:
   (Chair signature)
   Date: 12-18-12

   Approved by Curriculum Committee:
   (Chair signature)
   Date: 

   Approved by Faculty Senate:
   (Chair signature)
   Date: 

(Revised 1/29/09)