



MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Formerly University of Missouri-Rolla

Agenda

Campus Curricula Committee Meeting

December 8, 2010 Meeting

11 a.m. Room 117 Fulton Hall

Review of submitted CC forms:

CC 8031, Geology 434, Granite and Rhyolite Petrogenesis, effective Fall 2010.

CC 8032, Geology 420, Analytical Structural Geology, effective Spring 2011.

CC 8033, Geology 320, Advanced Structural Geology, effective Spring 2011

CC 8070, Mechanical Engineering 312, Introduction to Finite Element Analysis, effective Spring 2011.

CC 8071, Metallurgical Engineering 318, Principles for Microstructural Design, effective Spring 2012.

CC 8072, MSE 418, Principles for Advanced Microstructural Design, effective Spring 2011.

CC 8073, Ceramic Engineering 222, Applied Glass Forming, effective Spring 2011.

CC 8074, Explosives Engineering 491, Internship, effective Summer 2011.

CC 8075, Explosives Engineering 499, Practicum, effective Summer 2011.

CC 8080, Mechanical Engineering 330, Applied Computational Methods, effective Spring 2011.

CC 8082, Business 490, Research, effective Fall 2011.

CC 8083, Marketing 490, Research, effective Fall 2011.

CC 8084, Business 496, Project Research, effective Fall 2011.

CC 8085, Mechanical Engineering 423, effective Spring 2011.

CC 8086, Mechanical Engineering 435, effective Spring 2011.



MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

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CC 8087, Mechanical Engineering 220, Engineering Design Methodology, effective Spring 2011.

CC 8090, Mining Engineering 270, Mining Industry Economics, effective Fall 2011.

CC 8091, Technical Communication 331, Technical Editing, effective Fall 2011.

CC 8092, Technical Communication 361, History of Technical Communication, effective Fall 2011.

CC 8093, Computer Science 253, Algorithms, effective Fall 2011.

CC 8094, Business 350, Customer Focus and Satisfaction, effective Fall 2011.

CC 8095, Marketing 350, New Product Development, effective Spring 2011.

CC 8096, Marketing 450, Advanced New Product Development, effective Fall 2011.

CC 8097, Business 450, Advanced Customer Focus and Satisfaction, effective Fall 2011.

Review of submitted EC forms:

EC 2293, Geological Engineering 401, Surface Waves (MASW) & Ground Penetrating Radar (GPR), effective Spring 2011.

EC 2294, Explosives Engineering 401, Regulatory Issues in the Explosives Industry, effective Summer 2011.

EC 2295, Mechanical Engineering 301, Fuel Cell Principles, effective Spring 2011.

EC 2297, Economics 301, Economic Analysis of Natural Resources of South Africa, effective Spring 2011.

EC 2298, Economics 301, Field Investigation of the Economics of Natural Resources of South Africa, effective Spring 2011.

EC 2299, Geology 301, Geological Field Investigation of Natural Resources of South Africa, effective Spring 2011.

EC 2300, Geology 301, Geological Analysis of Natural Resources of South Africa, effective Spring 2011.



MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Formerly University of Missouri-Rolla

EC 2301, ERP 301, Enterprise Resource Planning systems in small and Medium size Enterprise, effective Fall 2011.

EC 2302, Mechanical Engineering 401, Advanced Digital Design and Manufacturing, effective Spring 2011.

EC 2303, Civil Engineering, Environmental Engineering 301, Phytoremediation and Natural Treatment Systems: Science and Design, effective Spring 2011.

EC 2304, MSE 401, Advanced Principles of Microstructural Design, effective Spring 2011.

EC 2305, Geology 401, Advanced Depositional Systems, effective Spring 2011.

EC 2306, Geology 401, Stratigraphy and Basin Evolution, effective Spring 2011.

Tabled Items:

CC 8004, Aerospace Engineering 319, Advanced Thermodynamics. **Tabled**

Effective Year: 2010

Effective Term: Summer ☐ Fall ☒ Spring ☐

CC File # 8031-2010-Geo-434-

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)New Course ☒Course Deletion ☐Credit Hours ☐Prerequisites ☐Course Title ☐Catalog Description ☐Course Number ☐Co-listing ☐**Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Geological Sciences and Engine

2. Discipline and Course Number: Present:

Proposed: Geo 434

3. Course Title: Present:

Proposed: Granite and Rhyolite Petrogenesis

Abbreviated Course Title: Granite Petrogenesis

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

4. Catalog Description (40 Words or Less)

Present:

Proposed: The origin of granites and rhyolites with respect to extreme fractionation, crustal anatexis, magma mixing, and tectonic setting will be explored through critical reading of the literature and examination of hand samples and thin sections from classic geologic terranes. A research paper is required as well as a field trip at the student's expense.

5. If course requires field trip check box: ☒

6. Credit Hours:

Present:

Lecture:

Lab:

Total:

Proposed:

Lecture: 3

Lab: 1

Total: 4

7. Prerequisites:

Present:

Geology 130

Proposed:

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

9. Justification: Please approve the CC from directly as this course will meet concurrently with the current undergraduate class (Geo 330). Graduate students will complete additional assignments (research papers, oral presentations, additional exercises), in addition to all other assignments.

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

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

1)

2)

3)

4)

5)

6)

Recommended by Department

(Chair signature)

Date: 9-15-10

Recommended by Discipline Specific Curricula Committee

(Chair signature)

Date: 10/22/2010

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

(Revised 1/31/08)

CC File # 8032-2010-Geo-420-1C

Effective Year: 2011

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

1. Department: Geological Sciences and Engine

2. Discipline and Course Number: Present:

3. Course Title: Present:

Proposed: Analytical Structural Geology

Abbreviated Course Title: Analyt Structural Geo

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

4. Catalog Description (40 Words or Less)

Present:

Proposed: The course provides theoretical background, analytical techniques, and hands-on experience, for quantifying processes that lead to the formation and evolution of rocks and structures produced as a result of deformation at a variety of scales - hand sample to global. Poster- and oral- presentations, and a research paper required.

5. If course requires field trip check box: ☐

6. Credit Hours:

Present:

Lecture:

Lab:

Total:

Proposed:

Lecture: 2

Lab: 1

Total: 3

7. Prerequisites:

Present: Geology 220, Geophysics 381

Proposed:

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

9. Justification: This course is needed for the graduate program and will meet at the same time as the undergraduate class (320). Graduate students will complete a research paper and present the topic to the class, in addition to other assignments.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): 2008, 2009, 210, spring 201

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

1)

2)

3)

4)

5)

6)

Recommended by Department

(Chair signature)

Date: 9-15-10

Recommended by Discipline Specific Curricula Committee

(Chair signature)

Date: 10/22/2010

Approved by Curricula Committee:

(Chair signature)

Date:

Approved by Faculty Senate:

(Chair signature)

Date:

(Revised 1/31/08)

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Effective Year: 2011
Effective Term: Summer ☐ Fall ☐ Spring ☒

CC File # 8033-2010-Geo-320-10

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

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

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

1. Department: Geological Sciences and Engine

2. Discipline and Course Number: Present:

Proposed: ~~320-322~~ Geo 320

3. Course Title: Present:

Proposed: Advanced Structural Geology

Abbreviated Course Title: Adv Structural Geology

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

4. Catalog Description (40 Words or Less)

Present:

Proposed: The course provides theoretical background, analytical techniques, and hands-on experience, for analyzing geologic structures at a variety of scales - hand sample to global.

5. If course requires field trip check box: ☐

6. Credit Hours:	Present:	Lecture:	Lab:	Total:
	Proposed:	Lecture: 2	Lab: 1	Total: 3

7. Prerequisites:

Present: Geology 220, Geophysics 381

Proposed: ←

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

9. Justification: Considerable interest from undergraduate students to have an advanced course in structural geology. This course will meet with the graduate class (420), but with different expectations for assignments and assessment for both groups.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): 2008, 2009, 2010
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1) 2) 3)

4) 5) 6)

Recommended by Department

(Chair signature)

Date: 9-15-10

Recommended by Discipline Specific Curricula Committee

(Chair signature)

Date: 10/22/2010

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

(Revised 1/31/08)

Dear colleagues,

Please find the attached revised CC forms requesting approval for a graduate level course in Geological Sciences "Granite and Rhyolite Petrogenesis" as well as for Advanced Structural Geology and Analytical Structural Geology. I believe I have made all the changes requested. I apologize for wasting the committee's time correcting my grammatical errors as well as technical errors (placing information in section 11 rather than section 10).

"Granites and Rhyolites"

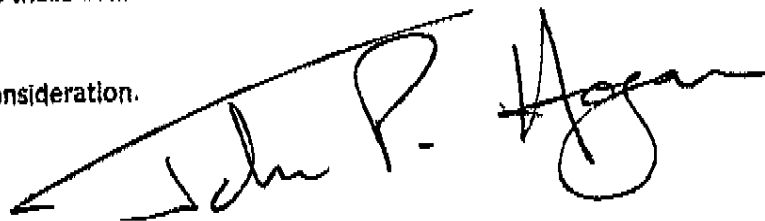
To clarify my request, this course will meet concurrently with the current undergraduate elective course Geology 330 "Granites & Rhyolites. This is standard practice across campus- it is essential for programs with a limited number of faculty to make this adjustment if they are to be able to offer the courses necessary to maintain a graduate program. I am requesting that the EC requirement for the graduate course be waived because there is a similar permanent course already on the books. In addition, I would like to have this course approved for the Fall semester, so that two graduate students that are currently taking this course may drop Geology 330 and add Geology 434. These two students need this 400 level course to meet the requirement for their graduate degree. They are both funded by their government and are on a strict timetable to complete their degree requirements. I thought I had taken care of submitting this form the last time I taught the course several semesters ago. It became clear to me late last spring that this was not the case. Because this request involves a very small number of students and will impact them in a very positive way, I hope you will see fit to agree to this request.

In addition, there is a possibility that a student with a BS in Geology and Geophysics from Missouri S&T will have taken Geology 330. This student may subsequently enroll in the graduate program in Geology and Geophysics at Missouri S&T and then request to take Geology 434 as part of their graduate degree program. The decision as to whether or not to accept this course as part of the student's graduate program will be subject to the approval of the student's graduate committee. I would not have a problem with this or a similar request. Many geoscientists have established impressive scientific careers researching the origin of granites and rhyolites. If a Missouri S&T student wished to pursue a similar career path as a result of having taken Geology 330 as an undergraduate and then at a later date wanted to take Geology 434 I know I could honor that student's request by continuing to provide a challenging and stimulating learning environment rather than just duplicating previous course material.

Advanced Structural Geology and Analytical Structural Geology

I know in the past there were problems with the EC forms for this class. However, a variation of these courses was taught in 2008, 2009, and 2010 with good enrollment. This information was inadvertently placed in section 11 rather than section 10. Therefore I am requesting they be made permanent course. It is important to have these courses listed in the catalog to recruit high quality graduate students to the program.

Thank you for your consideration.



Effective Year: 2011

Term: Summer ☐ Fall ☐ Spring ☒

CC File # 8070-2010-ME-312-32

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: Mech & Aero Eng.

2. Discipline and Course Number: Present : Mc Eng 312 Proposed:

3. Course Title: Present: Introduction to Finite Element Analysis
 Proposed:

Abbreviated Course Title:

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

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

Present: Variational formulation of the governing equations. Finite element model, interpolation functions, numerical integration, assembly of elements and solution procedures. Applications to solid mechanics, fluid mechanics and heat transfer problems. Computer implementation and use of commercial codes.

Proposed:

5. If course requires field trip check box: ☐

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

7. Prerequisites:

Present: Math 204

Proposed: Mc Eng 208 or Ae Eng 253; or consent of instructor for majors that do not require either of these courses.

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

9. Justification: Separate prerequisites are required to maintain the course background for various majors.

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) AE 352 2) 3)

4) 5) 6)

Recommended by Department Robert M. MillerDate: 09/08/10

Recommended by Discipline Specific Curricula Committee Greg A. Benner
 (Chair signature)

Date: 10-15-10

Approved by Curricula Committee: _____
 (Chair signature)

Date: _____

Approved by Faculty Senate: _____
 (Chair signature)

Date: _____

(Revised 1/29/09)

Effective Year: 2012

Term: Summer ☐ Fall ☐ Spring ☒

CC File # 8071-2010-Metlg-318-10

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

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

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

1. Department: Materials Science & Engineering

2. Discipline and Course Number: Present:

Proposed: Met 318

3. Course Title: Present:

Proposed: Principles for Microstructural Design

Abbreviated Course Title: Microstructural Design

(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 introduce the basics of microstructural principles that can be used to design advanced materials. It will help students learn about the basic principles and microstructural design approaches.

5. If course requires field trip check box: ☐

6. Credit Hours:	Present:	Lecture:	Lab:	Total:
	Proposed:	Lecture: 2.0	Lab: 0.0	Total: 2.0

7. Prerequisites:

Present:

Proposed: At least junior standing, and Met 215 and Met 217 or equivalent.

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

9. Justification: This course is need for students to acquire the latest in Integrated Computational Materials Engineering (ICME) approach. ICME is being promoted by NAE, NSF and other federal agencies.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): FS2004; SP2006

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

1) 2) 3)

4) 5) 6)

Recommended by Department



(Chair signature)

Date: 9/9/10

Recommended by Discipline Specific Curricula Committee

(Chair signature)

Date: 10-15-10

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

(Revised 1/29/09)

Effective Year: 2011

Term: Summer ☐ Fall ☐ Spring ☒

CC File # 8072-2010-MSE-418-10

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

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

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

1. Department: Materials Science & Engineering

2. Discipline and Course Number: Present:

Proposed: MSE 418

3. Course Title: Present:

Proposed: Principles for Advanced Microstructural Design

Abbreviated Course Title: Adv Microstructural

(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 introduce the microstructural principles that can be used to design advanced materials. It will help students learn about the principles and microstructural design approaches. In addition, they will design a theoretical microstructure for high efficiency structure.

5. If course requires field trip check box: ☐

6. Credit Hours:	Present:	Lecture:	Lab:	Total:
	Proposed:	Lecture: 3.0	Lab: 0.0	Total: 3.0

7. Prerequisites:

Present:

Proposed: Graduate level

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

9. Justification: This course is need for students to acquire the latest developments in Integrated Computational Materials Engineering (ICME) approach. ICME is being promoted by NAE, NSF and other federal agencies.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): FS2004; SP2006

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

Wayne Schubert

Date: 9/9/10

Recommended by Discipline Specific Curricula Committee

(Chair signature)

James H. Beatty

Date: 10-15-10

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

(Revised 1/29/09)

Effective Year: 2011

Term: Summer ☐ Fall ☐ Spring ☒

CC File # 8073-2010-Lerlog-22210

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)New Course ☒Course Deletion ☐Credit Hours ☐Prerequisites ☐Course Title ☐Catalog Description ☐Course Number ☐Co-listing ☐**Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Materials Science & Engineering

2. Discipline and Course Number: Present :

Proposed: Cer 222

3. Course Title: Present:

Proposed: Applied Glass Forming

Abbreviated Course Title: Applied Glass Forming

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

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

Present:

Proposed: Examines the properties and behavior of molten glass along with basic forming techniques, including off-hand shaping, molding and casting.

5. If course requires field trip check box: ☐

6. Credit Hours:

Present:

Lecture:

Lab:

Total:

Proposed:

Lecture: 1.0

Lab: 1.0

Total: 2.0

7. Prerequisites:

Present:

Proposed: Cer 104 or Met 125; freshmen, sophomore, or junior only or by instructor permission

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

9. Justification: To allow students to gain experience with traditional industrial techniques with larger quantities of glass.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): SP2010; FS2010

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

1) 2) 3)

4) 5) 6)

Recommended by Department



(Chair signature)

Date:

9/9/10

Recommended by Discipline Specific Curricula Committee

(Chair signature)

Date:

10-15-10

Approved by Curricula Committee:

(Chair signature)

Date:

Approved by Faculty Senate:

(Chair signature)

Date:

(Revised 1/29/09)

Effective Year: 2011

Term: Summer ☒ Fall ☐ Spring ☐

CC File #8074-2010-ExpEng-491-10

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 & Nuclear Engineering

2. Discipline and Course Number: Present:

Proposed: ExpEng 491

3. Course Title: Present:

Proposed: Internship

Abbreviated Course Title: Internship

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

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

Present:

Proposed: Students apply critical thinking skills and discipline specific knowledge in a work setting based on a project designed by the advisor and employer. Activities will vary depending on the student's background and the setting. Requires major report and formal presentation to sponsoring organization.

5. If course requires field trip check box: ☐

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

7. Prerequisites:
Present:

Proposed: 12hrs of ExpEng courses including ExpEng307.

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

9. Justification: See attached Justification

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

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

1) 2) 3)

4) 5) 6)

Recommended by Department

(Chair signature)

Recommended by Discipline Specific Curricula

(Chair signature)

Approved by Curricula Committee:

(Chair signature)

Approved by Faculty Senate:

(Chair signature)

Date:

Date:

Date:

Date:

(Revised 1/29/09)

Explosives Engineering

Proposed courses:

491 Internship (IND 0.0-6.0) Students apply critical thinking skills and discipline specific knowledge in a work setting based on a project designed by the advisor and employer. Activities will vary depending on the student's background and the setting. Requires major report and formal presentation to sponsoring organization. 12hrs of ExpEng courses including ExpEng307.

499 Practicum (IND 0.0-6.0) This course is similar to the ExpEng 491 Internship course. The difference is that this course is intended for students who are already employed by an organization for whom they wish to continue working. Prerequisite: Prerequisite: 12hrs of ExpEng courses including ExpEng307.

Justification.

On 22 April 2010 the Coordinating Board of Higher Education (CBHE) approved (at state level) the new Master of Science in Explosives Engineering at the Missouri University of Science and Technology. The degree has been put in place and is listed in the new 2010-2012 graduate catalog with the first 11 classes/courses listed with the new ExpEng designation. We are very proud of this accomplishment.

The approved proposal package includes a 491 internship which is intended for students to gain practical experience in the explosives industry. The internship is modeled on the S&T Business program graduate internship. It is our intent to require the MS student in Explosives Engineering to acquire practical experience related to explosives in industry or government before graduating. We feel this is very important.

For persons already employed in industry or government the graduate "practicum" as offered by the S&T Business program, Business 499, makes sense over the 491 designation. The difference is the practicum is for students already employed. For the explosives engineering program it will be in explosives related employment. In addition we have currently submitted a Master of Science of Explosives Engineering non thesis degree option to cater for nontraditional students, such as those who are unable to stay on campus for 6 months to do a research project due to work, military commitments, or financial considerations due to loss of salary and having to support a family. For these persons whom the explosives engineering masters is a means of job advancement in their field we are opting for the practicum over the internship. The MS in explosives engineering without thesis will be reserved for those who are not able to complete a full research project and will be reserved for those in an explosives related industry or government position.

The above explains the background of our submission of a request for approval of ExpEng 491 Internship and ExpEng 499 practicum. We are still in the process of applying for new courses as we try to get everything up and running with the new program and we hope to have everything fully in place by fall 2011. Enrollment is already 13 MS students, 2 of which have already completed their thesis defense and will be graduating at Christmas. We also have 13 in the graduate certificate 6 of which have voiced the intent to join the masters when they have completed their certificates and a host of other applications anticipated to be processed before Christmas.

Effective Year: 2011
Term: Summer ☒ Fall ☐ Spring ☐

CC File #8075-2010-ExpEng-499-10

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 & Nuclear Engineering

2. Discipline and Course Number: Present:

Proposed: ExpEng 499

3. Course Title: Present:

Proposed: Practicum

Abbreviated Course Title: Practicum

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

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

Present:

Proposed: This course is similar to the ExpEng 491 Internship course. The difference is that this course is intended for students who are already employed by an organization for whom they wish to continue working.

5. If course requires field trip check box: ☐

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

7. Prerequisites:
Present:

Proposed: Prerequisite: 12hrs of ExpEng courses including ExpEng307.

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

9. Justification: See attached justification

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:

(Chair signature)

(Chair signature)

(Chair signature)

(Chair signature)

Date:

Date:

Date:

Date:

Explosives Engineering

Proposed courses:

491 Internship (IND 0.0-6.0) Students apply critical thinking skills and discipline specific knowledge in a work setting based on a project designed by the advisor and employer. Activities will vary depending on the student's background and the setting. Requires major report and formal presentation to sponsoring organization. 12hrs of ExpEng courses including ExpEng307.

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Justification,

On 22 April 2010 the Coordinating Board of Higher Education (CBHE) approved (at state level) the new Master of Science in Explosives Engineering at the Missouri University of Science and Technology. The degree has been put in place and is listed in the new 2010-2012 graduate catalog with the first 11 classes/courses listed with the new ExpEng designation. We are very proud of this accomplishment.

The approved proposal package includes a 491 internship which is intended for students to gain practical experience in the explosives industry. The internship is modeled on the S&T Business program graduate internship. It is our intent to require the MS student in Explosives Engineering to acquire practical experience related to explosives in industry or government before graduating. We feel this is very important.

For persons already employed in industry or government the graduate "practicum" as offered by the S&T Business program, Business 499, makes sense over the 491 designation. The difference is the practicum is for students already employed. For the explosives engineering program it will be in explosives related employment. In addition we have currently submitted a Master of Science of Explosives Engineering non thesis degree option to cater for nontraditional students, such as those who are unable to stay on campus for 6 months to do a research project due to work, military commitments, or financial considerations due to loss of salary and having to support a family. For these persons whom the explosives engineering masters is a means of job advancement in their field we are opting for the practicum over the Internship. The MS in explosives engineering without thesis will be reserved for those who are not able to complete a full research project and will be reserved for those in an explosives related industry or government position.

The above explains the background of our submission of a request for approval of ExpEng 491 Internship and ExpEng 499 practicum. We are still in the process of applying for new courses as we try to get everything up and running with the new program and we hope to have everything fully in place by fall 2011. Enrollment is already 13 MS students, 2 of which have already completed their thesis defense and will be graduating at Christmas. We also have 13 in the graduate certificate 6 of which have voiced the intent to join the masters when they have completed their certificates and a host of other applications anticipated to be processed before Christmas.

Effective Year: 2011

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: MAE

2. Discipline and Course Number: Present :

Proposed: Mc Eng 330

3. Course Title: Present:

Proposed: Applied Computational Methods

Abbreviated Course Title: Computational Methods

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

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

Present:

Proposed: Detailed study of computational methods for efficient solution of selected fluids, structures, thermodynamics, and controls problems in aerospace and mechanical engineering. Besides basic numerical techniques, topics covered include gradient-based optimization and uncertainty quantification.

5. If course requires field trip check box: ☐

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

7. Prerequisites:
Present:

Proposed: Cmp Sc 53 or 73 or 78; Math 204

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

9. Justification: The course was offered in Spring 2009 (24 students) and Spring 2010 (33 students) with experimental status. The enrollment numbers and positive feedback received from students/faculty encouraged the instructor to continue teaching it with a permanent course number. There is no change in the course structure, format, or catalog description.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): Sp 2009, Sp 2010

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

1) Ae Eng 330 2) 3)

4) 5) 6)

Recommended by Department Michael Medina

(Chair signature)

Date: 10/10/10Recommended by Discipline Specific Curricula Committee Steve Watkins

(Chair signature)

Date: 11/5/10

Approved by Curricula Committee: _____

(Chair signature)

Date: _____

Approved by Faculty Senate: _____

(Chair signature)

Date: _____

Effective Year: 2011

CC File # 8082-2010-BUS-490-31

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: Business and Information Techn

2. Discipline and Course Number: Present : BUS 490

Proposed:

3. Course Title: Present: Research

Proposed:

Abbreviated Course Title: Research

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

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

Present: The research project will involve students applying research techniques and discipline specific knowledge working on a project designed by the advisor, often working with a business organization. Requires major report and formal presentation to sponsoring organization.

Proposed: Research investigation of an advanced nature leading to a major report suitable for publication in a journal or in a conference proceedings.

5. If course requires field trip check box: ☐

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

Proposed: Lecture: 0-9 Lab: Total: 0-9

7. Prerequisites:

Present: BUS 420

Proposed: Permission of the instructor.

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

9. Justification: Provide consistency with 490 designations for other programs without Thesis.

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

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

1) 2) 3)

4) 5) 6)

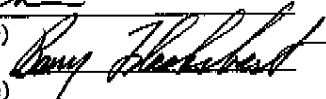
Recommended by Department



(Chair signature)

Date: 10/19/10

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Date: 10/20/10

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

(Revised 1/29/09)

Effective Year: 2011

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: Business and Information Techn

2. Discipline and Course Number: Present : MKT 490

Proposed:

3. Course Title: Present: Research

Proposed:

Abbreviated Course Title: Research

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

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

Present: Investigations of an advanced nature.

Proposed: Research investigation of an advanced nature leading to a major report suitable for publication in a journal or in a conference proceedings.

5. If course requires field trip check box: ☐6. Credit Hours: Present: Lecture: 0-15 Lab: Total: 0-15
Proposed: Lecture: 0-9 Lab: Total: 0-97. Prerequisites:
Present:

Proposed:

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

9. Justification: Provide consistency with 490 designations for other programs without Thesis.

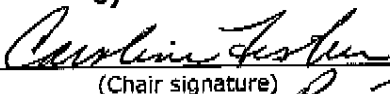
10. Semesters previously offered as an experimental course (101, 201, 301, 401):

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

1) 2) 3)

4) 5) 6)

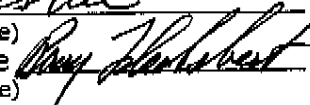
Recommended by Department



(Chair signature)

Date: 10/19/10

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Date: 10/20/10

Approved by Curricula Committee:

(Chair signature)

Date:

Approved by Faculty Senate:

(Chair signature)

Date:

Effective Year: 2011

CC File # 8084-2010-BUS-496-10

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:** Business and Information Techn2. **Discipline and Course Number:** Present : BUS 496

Proposed:

3. **Course Title:** Present:

Proposed: Project Research

Abbreviated Course Title: Project Research

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

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

Present:

Proposed: The research project will involve students applying research techniques and discipline specific knowledge working on a project designed by the advisor, often working with a business organization. Requires major report and formal presentation to sponsoring organization.

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

Present:

Lecture:

Lab:

Total:

Proposed:

Lecture: 0-9

Lab:

Total: 0-9

7. **Prerequisites:**

Present:

Proposed: Permission of the instructor.8. **Required for Majors:** ☐**Elective for Majors:** ☒

9. **Justification:** This is BUS 490 today, in essence. BUS 490 is being changed to be consistent with other 490 courses for non-thesis granting programs. But BUS needs this course to continue to be an option for MBA students. It needs to be approved concurrently with the change to BUS 490.

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

1)

2)

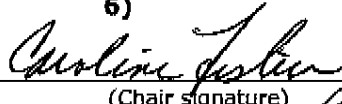
3)

4)

5)

6)

Recommended by Department



(Chair signature)

Date:

10/19/10

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Date:

10/20/10

Approved by Curricula Committee:

(Chair signature)

Date:

Approved by Faculty Senate:

(Chair signature)

Date:

(Revised 1/29/09)

Effective Year: 2011

Term: Summer ☐ Fall ☐ Spring ☒

CC File #8085-2010-ME-423-32

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: MAE

2. Discipline and Course Number: Present : Mc Eng 423

Proposed:

3. Course Title: Present: Viscous Fluid Flow

Proposed:

Abbreviated Course Title:

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

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

Present: Fundamentals of viscous fluids for incompressible and compressible flows governed by Navier-Stokes equations; exact, approximate, and numerical solutions for steady and unsteady laminar flows; stability, transition, and turbulence, CFD simulations of internal and external flows.

Proposed: Fundamentals of viscous fluids for incompressible and compressible flows governed by Navier-Stokes equations; exact, approximate, and numerical solutions for steady and unsteady laminar flows; boundary layer theory for incompressible and compressible flows; stability and transition.

5. If course requires field trip check box: ☐

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

7. Prerequisites:

Present: ME/AE 331

Proposed: ME/AE 331 or ME/AE 339 or equivalent.

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

9. Justification: The course was last taught in Fall 2008. The prerequisite change will open the course to suitably motivated students in MAE and other department interested in the topic. The change in the catalog description is to account for changes to the course contents: discussion on turbulent flows have been omitted as a separate course: ME/AE 435 (Turbulent Flows) is being taught in the department. The textbook to be used for the course is : Viscous Fluid Flow by Frank White, McGraw Hill, 3rd Edition, 2006.

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) Ae Eng 423 2) 3)

4) 5) 6)

Recommended by Department

(Chair signature)

Date: 10/13/10

Recommended by Discipline Specific Curricula Committee

(Chair signature)

Date: 11/15/10

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

(Revised 1/29/09)

Effective Year: 2011

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: MAE

2. Discipline and Course Number: Present : Mc Eng 435 Proposed:

3. Course Title: Present: Turbulence in Fluid Flow
Proposed: Turbulent Flows - Theory, Measurements & Modeling

Abbreviated Course Title: Turbulent Flows

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

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

Present: Fundamentals of statistical theory of turbulence; turbulence modeling for transport processes of heat, mass, and momentum; closure schemes for Reynolds-averaged Navier-Stokes equations in free turbulence and wall turbulence; CFD simulations of turbulent flows.

Proposed: Navier-Stokes equations; statistical description and mean-flow equations; behavior of free shear and wall bounded flows; the energy cascade; turbulence spectra and Kolmogorov hypothesis; measurement techniques: PIV, hot-wires, LDV; turbulence modeling for transport processes and closure schemes for RANS equations; evaluation of model constants, introduction to LES, DNS and hybrid-RANS.

5. If course requires field trip check box: ☐6. Credit Hours: Present: Lecture: 3 Lab: Total: 3
Proposed: Lecture: Lab: Total:

7. Prerequisites:

Present: ME/AE 331

Proposed: ME/AE 331 or ME/AE 339 or equivalent.

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

9. Justification: The course was last taught in Fall 2009 (after a gap of 11 years). The prerequisite change will open the course to suitably motivated students in MAE and other department interested in the topic. The change in the catalog description is to account for changes to the course contents and make it current and topical. The textbook to be used for the course is: Turbulent Flows by Stephen B. Pope. Cambridge University Press, 2000.

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) Ae Eng 435 2) 3)

4) 5) 6)

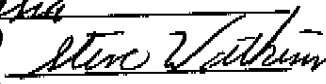
Recommended by Department



(Chair signature)

Date: 10/13/10

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Date: 11/15/10

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

(Revised 1/29/09)

Effective Year: 2011

Effective Term: Summer ☐ Fall ☐ Spring ☒

CC File # 8087-2010-ME-220-32

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: MAE

2. Discipline and Course Number: Present : Mc Eng 220

Proposed: Mc Eng 361

3. Course Title: Present: Engineering Design Methodology

Proposed:

Abbreviated Course Title:

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

4. Catalog Description (40 Words or Less)

Present: This course examines structured engineering design theory and methodologies for conceptual design and redesign of products. Topical coverage includes customer needs gathering, functional modeling, engineering specifications creation (OFD), concept generation, selection and design embodiment. Team work/hands-on projects emphasized.

Proposed: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: Junior standing in engineering and at least 12 hours major field credit

Proposed: Senior standing in engineering

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

9. Justification: Advanced topics in design team forming, customer need organization and segmentation, reverse engineering, concept testing and selection have been added to the course.

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

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

1)

2)

3)

4)

5)

6)


Recommended by Department



(Chair signature)

Date: 10/13/10

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Date: 11/5/10

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

CC File # 8090-2010-MINE-270-3

Effective Year: 2011

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: Mining and Nuclear Engineering

2. Discipline and Course Number: Present : Min 270

Proposed:

3. Course Title: Present: Mining Industry Economics

Proposed:

Abbreviated Course Title:

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

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

Present:

Proposed:

5. If course requires field trip check box: ☐

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

7. Prerequisites:

Present: None

Proposed: Econ 121 or 122

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

9. Justification:

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

Recommended by Discipline Specific Curricula Committee

Approved by Curricula Committee:

Approved by Faculty Senate:

(Chair signature)

(Chair signature)

(Chair signature)

(Chair signature)

Date: 10/21/10

Date: 11/5/10

Date: _____

Date: _____

(Revised 1/29/09)

Effective Year: 2011

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: ENGL & TCH COM

2. Discipline and Course Number: Present: TCH COM 331 Proposed:

3. Course Title: Present: Technical Editing
Proposed:

Abbreviated Course Title:

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

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

Present: The principles and practices of technical editing, including usability, audience analysis, contextual editing, the conventions of scientific and technical communication, and the role of the editor in document development and publication.

Proposed:

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: TCH COM 65 and TCH COM 240

Proposed: TCH COM 65, English 65, or consent of instructor

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

9. Justification: The prerequisite of ENGL/TCH COM 240 Layout and Design for all 300-level tech com courses was part of the original proposals for the BS and MS tech com degrees. Experience has taught us that ENGL/TCH COM 240 is not necessary for success in our 300-level courses. The prerequisite serves only to discourage (or prevent) students who do not have 240 from taking the course.

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

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

1) 2) 3)

4) 5) 6)

Recommended by Department


(Chair signature)

Recommended by Discipline Specific Curricula Committee


(Chair signature)

Approved by Curricula Committee:

(Chair signature)

Approved by Faculty Senate:

(Chair signature)

Date: 10/20/10

Date: 11/1/2010

Date: _____

Date: _____

Effective Year: 2011

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: ENGL & TCH COM

2. Discipline and Course Number: Present: TCH COM 361 Proposed:

3. Course Title: Present: History of Technical Communication
Proposed:

Abbreviated Course Title:

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

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

Present: Introduction to the roles of the technical communicator and the technologies of communication from ancient cultures to the present

Proposed:

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: TCH COM 65 and TCH COM 240

Proposed: TCH COM 65, English 65, or consent of instructor

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

9. Justification: The prerequisite of ENGL/TCH COM 240 Layout and Design for all 300-level tech com courses was part of the original proposals for the BS and MS tech com degrees. Experience has taught us that ENGL/TCH COM 240 is not necessary for success in our 300-level courses. The prerequisite serves only to discourage (or prevent) students who do not have 240 from taking the course.

10. Semesters

previously offered as an experimental course (101, 201, 301, 401): n/a


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

1) 2) 3)

4) 5) 6)

Recommended by Department 

(Chair signature)

Recommended by Discipline Specific Curricula Committee 

(Chair signature)

Approved by Curricula Committee: _____

(Chair signature)

Approved by Faculty Senate: _____

(Chair signature)

Date: 10/20/10

Date: 11/1/2010

Date: _____

Date: _____

Effective Year: 2011

Term: Summer ☐ Fall ☒ Spring ☐

CC File # **8093-2010-CS-253-32**

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: Computer Science

2. Discipline and Course Number: Present : Cmp Sc 253 Proposed:

3. Course Title: Present: Algorithms

Proposed:

Abbreviated Course Title:

(24 Spaces or Less, Only needed for New Courses or Title Changes.)

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

Present: Students will work to solve recurrence relations, analyze algorithms for correctness and time and space complexity, develop strategies for dynamic programming and greedy algorithms, create fundamental computing algorithms for shortest-path, minimal spanning trees, maximum flow, and hard problems.

Proposed:

5. If course requires field trip check box: ☐

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

7. Prerequisites:

Present: Comp Sci 128 and Comp Sci 153

Proposed: Cmp Sc 128, Cmp Sc 153, preceded or accompanied by Calculus I

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

9. Justification: Lack of Calculus I knowledge makes it hard for students to meet this course's demands for mathematical rigor.

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

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

1) 2) 3)

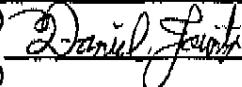
4) 5) 6)

Recommended by Department



(Chair signature)

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Approved by Curricula Committee:

(Chair signature)

Approved by Faculty Senate:

(Chair signature)

Date: Oct 27, 2010

Date: 11/5/2010

Date: _____

Date: _____

(Revised 1/29/09)

Effective Year: 2011

CC File # 8094-2010-BUS-350-10

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: Business and Information Tech

2. Discipline and Course Number: Present :

Proposed: BUS 350

3. Course Title: Present:

Proposed: Customer Focus and Satisfaction

Abbreviated Course Title: Customer Focus

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

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

Present:

Proposed: Major emphasis is given to the concept of customer focus, with coverage of techniques for obtaining customer needs, measuring customer satisfaction, developing products and services to satisfy customers, and maximizing the benefits of customer feedback. A semester long HoQ project will be done.

5. If course requires field trip check box: ☐

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

7. Prerequisites:

Present:

Proposed: MKT 310 or MKT 307 or Eng Mgt 251

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

9. Justification: This is to create a co-listing for MKT 350, an established course.


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

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

1) MKT3 2) 3)

4) 5) 6)

Recommended by Department




(Chair signature)

Date:

11/3/10

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Date:

11/3/10

Approved by Curricula Committee:

(Chair signature)

Date:

Approved by Faculty Senate:

(Chair signature)

Date:

(Revised 1/29/09)

Effective Year: 2011

CC File # 8095-2010-MKT-350-33

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: Business and Information Tech

2. Discipline and Course Number: Present : MKT 350

Proposed:

3. Course Title: Present: New Product Development

Proposed: Customer Focus and Satisfaction

Abbreviated Course Title: Customer Focus

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

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

Present: Major emphasis is given to the concept of customer focus, with coverage of techniques for obtaining customer needs, measuring customer satisfaction, developing products and services to satisfy customers, and maximizing the benefits of customer feedback. Students will work through a new product devel.

Proposed: Major emphasis is given to the concept of customer focus, with coverage of techniques for obtaining customer needs, measuring customer satisfaction, developing products and services to satisfy customers, and maximizing the benefits of customer feedback. A semester long HoQ project will be done.

5. If course requires field trip check box: ☐

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

7. Prerequisites:

Present: MKT 311 or MKT 307 or Eng mgt 251

Proposed:

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

9. Justification: Title to reflect course description more accurately and to add BUS 350 as a co-listed course.

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

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

1) BUS 350 2) 3)

4) 5) 6)

Recommended by Department Carolyn Fisher

(Chair signature)

Date: 11/3/10Recommended by Discipline Specific Curricula Committee Ray Thelbert

(Chair signature)

Date: 11/3/10

Approved by Curricula Committee: _____

(Chair signature)

Date: _____

Approved by Faculty Senate: _____

(Chair signature)

Date: _____

(Revised 1/29/09)

Effective Year: 2011

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: Business and Information Tech

2. Discipline and Course Number: Present : MKT 450

Proposed:

3. Course Title: Present: Advanced New Product Development

Proposed: Advanced Customer Focus and Satisfaction

Abbreviated Course Title: Advanced Customer Focus

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

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

Present: Major emphasis is given to the concept of customer focus, with coverage of techniques for obtaining customer needs, measuring customer satisfaction, developing products and services to satisfy customers, and maximizing the benefits of customer feedback. Each student will complete an individual new pr

Proposed: Major emphasis is given to the concept of customer focus, with coverage of techniques for obtaining customer needs, measuring customer satisfaction, developing products and services to satisfy customers, and maximizing the benefits of customer feedback. Individual focused research is included.

5. If course requires field trip check box: ☐

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

7. Prerequisites:

Present: MKT 311 or MKT 307 or Eng mgt 251

Proposed:

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

9. Justification: Title to reflect course description more accurately and to add BUS 450 as a co-listed course.

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

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

1) BUS 450 2) 3)

4) 5) 6)

Recommended by Department Carolyn Fisher

(Chair signature)

Date: 11/3/10Recommended by Discipline Specific Curricula Committee Ray Phelan

(Chair signature)

Date: 11/3/10

Approved by Curricula Committee: _____

(Chair signature)

Date: _____

Approved by Faculty Senate: _____

(Chair signature)

Date: _____

Effective Year: 2011

CC File # 8097-2010-BUS-450-10

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: Business & Information Tech

2. Discipline and Course Number: Present :

Proposed: BUS 450

3. Course Title: Present:

Proposed: Advanced Customer Focus and Satisfaction

Abbreviated Course Title: Advanced Customer Focus

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

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

Present:

Proposed: Major emphasis is given to the concept of customer focus, with coverage of techniques for obtaining customer needs, measuring customer satisfaction, developing products and services to satisfy customers, and maximizing the benefits of customer feedback. Individual focused research is included.

5. If course requires field trip check box: ☐

6. Credit Hours:

Present:

Lecture:

Lab:

Total:

Proposed:

Lecture: 3

Lab:

Total: 3

7. Prerequisites:

Present:

Proposed: MKT 311 or MKT 307 or Eng Mgt 251

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

9. Justification: This is to create a co-listing for MKT 450, an established course.

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

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

1) MKT4

2)


3)

4)

5)

6)

Recommended by Department



(Chair signature)

Date: 11/3/10

Recommended by Discipline Specific Curricula Committee

(Chair signature)

Date: 11/3/10

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

(Revised 1/29/09)

Effective Year: 2011

Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2293-5p2011-GE-401

Experimental Course Form (EC)

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

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

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

Department: GSE

Discipline and Course Number: GE 401

Course Title: Surface Waves (MASW) & Ground Penetrating Radar (GPR)

Abbreviated Title (24 spaces or less): MASW and GPR

Instructor(s): Anderson

Credit Hours: Lecture: 2 Lab: 1 Total:

Prerequisites: GE 50 or CE 215 or equivalent, and graduate standing

Semester(s) previously taught: Spring 2010

Brief Course Description: (40 words or less)

Basic theory and the acquisition, processing and interpretation of surface waves (MASW and ReMi) and ground penetrating radar (GPR) data are covered. Emphasis is placed on geotechnical and structural applications of these non-invasive imaging technologies. Numerous case studies are presented in order to illustrate the utility of these geophysical tools.

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

1)

2)


3)

4)

5)

6)

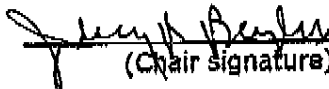
Department Chair:



(Chair Signature)

Date: 9-21-10

Discipline Specific Curricula Committee:



(Chair Signature)

Date: 10-15-10

Curricula Committee:

(Chair Signature)

Date: _____

(Revised 1/31/2008)

09/21/10

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Effective Year: 2011

Effective Term: Summer ☒ Fall ☐ Spring ☐

EC File # 2294-SS2011-ExpEng-401

Experimental Course Form (EC)

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

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

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

Department: Mining and Nuclear Engineering

Discipline and Course Number: ExpEng 401

Course Title: Regulatory Issues in the Explosives Industry

Abbreviated Title (24 spaces or less): Explosives Regulations

Instructor(s): Dr. Paul Worsey Dr. Gillian Worsey

Credit Hours: Lecture: 3 Lab: Total: 3

Prerequisites:

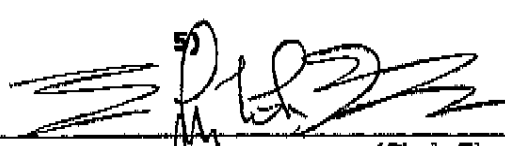
Semester(s) previously taught:

Brief Course Description: (40 words or less)

A comprehensive coverage of the regulations governing the explosives industry, including those of the Bureau of Alcohol, Tobacco Firearms and Explosives (ATF), the Department of Transportation (DOT), the Environmental Protection Agency (EPA) and other federal agencies.

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

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

Department Chair:  (Chair Signature)

Date: 09/17/10

Discipline Specific Curricula Committee:  (Chair signature)

Date: 10-5-10

Curricula Committee: _____ (Chair Signature)

Date: _____

09/14/10

(Revised 1/31/2008)

Effective Year: 2011

Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2295-Sp2011-ME-301

Experimental Course Form (EC)

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

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

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

Department: Mechanical and Aerospace Engineering

Discipline and Course Number: ME 301

Course Title: Fuel Cell Principles

Abbreviated Title (24 spaces or less): Fuel Cell Principles

Instructor(s): Umit O. Koylu

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

Prerequisites: ME 221

Semester(s) previously taught: -

Brief Course Description: (40 words or less)

Fuel cell fundamentals including thermodynamics, reaction kinetics, mass transport, characterization, and modeling are discussed. Different types of fuel cells such as proton exchange membrane and solid oxide are covered together with subsystem design and system integration as well as environmental impacts.

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

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

Department Chair: 
(Chair Signature)Date: 09/16/10Discipline Specific Curricula Committee: 
(Chair signature)Date: 10-15-10Curricula Committee: _____
(Chair Signature)

Date: _____

09/15/10

(Revised 1/31/2008)

Effective Year: 2011

Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2297-Sp 2011- Econ-30

Experimental Course Form (EC)

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

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

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

Department: Economics

Discipline and Course Number: Econ 301

Course Title: Economic Analysis of Natural Resources of South Africa

Abbreviated Title (24 spaces or less): Econ of S.A. Resources

Instructor(s): Dr. Gregg Gelles

Credit Hours: Lecture: 1 Lab: Total:

Prerequisites: ^{by} Geo 301 - Geological Analysis of Natural Resources of South Africa (taken concurrently with Econ 301 - Economics Analysis of Natural Resources of South Africa)

Semester(s) previously taught: none

Brief Course Description: (40 words or less)

Economic analysis of the utilization of natural resources of South Africa with an emphasis on strategic minerals, solid earth energy resources, bling minerals (diamond, gold), and endangered species. Students will utilize technology to complete joint projects with students from the University of the Western Cape, South Africa.

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

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

Department Chair: _____

(Chair Signature)

Date: 10/11/10

Discipline Specific Curricula Committee: _____

(Chair signature)

Date: 10/22/10

Curricula Committee: _____

(Chair Signature)

Date: _____

Effective Year: 2011

Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2298-5p2011-Econ-30.

Experimental Course Form (EC)

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

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

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

Department: Economics

Discipline and Course Number: Econ 301

Course Title: Field Investigation of the Economics of Natural Resources of South Africa

Abbreviated Title (24 spaces or less): Econ. Field Studies S.A.

Instructor(s): Dr. Greg Gelles

Credit Hours: Lecture: 2 Lab: Total:

Prerequisites: ~~Econ 301 – Economic Analysis of Natural Resources of South Africa, Geo 301 – Geological Analysis of Natural Resources of South Africa, and Geo 301 – Geological Field Investigation of Natural Resources of South Africa (taken concurrently with Geo 301 – Geological Field Investigation of Natural Resources of South Africa)~~

Semester(s)
previously
taught: none

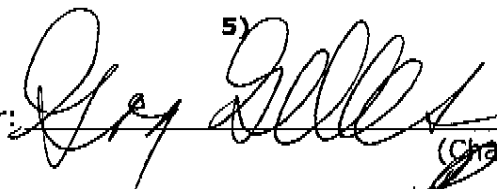
Brief Course Description: (40 words or less)

A three week field studies in South Africa examining the economic utilization of the natural resources of the country including site visits to mines (diamond, gold), geological sites (Cape of Good Hope), big game animal parks, and areas of cultural interest associated with utilization of these resources.

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

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

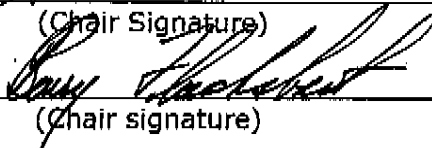
Department Chair:



(Chair Signature)

Date: 10/11/10

Discipline Specific Curricula Committee:



(Chair signature)

Date: 10/22/10

Curricula Committee:

(Chair Signature)

Date:

Huffman, Angie L.

From: Scott, Marcy L.
Sent: Wednesday, October 20, 2010 10:47 AM
To: Huffman, Angie L.
Subject: Updates for Econ EC forms

Importance: High

Hi Angie,

I need to update the wording on the 'Prerequisites' for both the forms I just sent you for the Econ 301's.

EC form Econ 301/*Economic Analysis of Natural Resources of South Africa* Prerequisites should read:
Preceded or accompanied by Geol 301 – Geological Analysis of Natural Resources of South Africa.

EC form Econ 301/*Field Investigation of the Economics of Natural Resources of South Africa* Prerequisites should read:
Geol 301 Geological Analysis of Natural Resources of South Africa, Econ 301 Economic Analysis of Natural Resources of South Africa, preceded or accompanied by Geol 301 – Geological Field Investigation of Natural Resources of South Africa.

The curriculum committee within Geological wanted the wording changed on theirs to include 'preceded or accompanied by' so that decision affects our forms as the four courses (our 2 and their 2) are taken together, in tandem or in some combination intertwined. Thank you!!

~marcy

Marcy L. Scott

Administrative Assistant
Department of Economics
101 Harris Hall
500 W. 13th St.
Missouri University of Science and Technology
Rolla, MO 65409-1250
573-341-4800
573-341-4866 (fax)
www.mst.edu
(FORMERLY University of Missouri-Rolla/UMR)

Effective Year: 2011

Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2299-Sp2011-Geol-301

Experimental Course Form (EC)

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

Summer and Fall Semester Offerings - January 1

Spring Semester Offerings - August 1

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

Department: Geological Sciences and Engineering

Discipline and Course Number: Geo 301

Course Title: Geological Field Investigation of Natural Resources of South Africa

Abbreviated Title (24 spaces or less): Geol. Field Studies S.A.

Instructor(s): Dr. John P. Hogan

PRECEDED OR ACCOMPANIED BY

Credit Hours: Lecture: 2 Lab: Total:

Prerequisites: Geo 301 - Geological Analysis of Natural Resources of South Africa, Econ 301 - Economic Analysis of Natural Resources of South Africa, and Econ 301 - Field Investigation of the Economics of Natural Resources of South Africa (taken concurrently with Econ 301 - Field Investigation of the Economics of Natural Resources of South Africa)

Semester(s) previously taught: none

Brief Course Description: (40 words or less)

A three week field studies in South Africa of the geology of the natural resources of the country including site visits to mines (diamond, gold), geological sites (Cape of Good Hope), and areas of cultural interest associated with utilization of these resources.

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

1) 2) 3)

4) 5) 6)

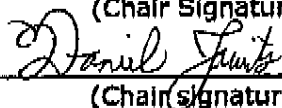
Department Chair: _____



(Chair Signature)

Date: 10-11-10

Discipline Specific Curricula Committee: _____



(Chair Signature)

Date: 10/22/2010

Curricula Committee: _____

(Chair Signature)

Date: _____

Effective Year: 2011

Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2300-Sp 2011-Geol-301

Experimental Course Form (EC)

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

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

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

Department: Geological Sciences and Engineering

Discipline and Course Number: Geo 301

Course Title: Geological Analysis of Natural Resources of South Africa

Abbreviated Title (24 spaces or less): Geol. Resources of S.A.

Instructor(s): Dr. John P. Hogan

Credit Hours: Lecture: 1 Lab: Total:

Prerequisites: *PRECEDED OR ACCOMPANIED BY*
Econ 301 - Economic Analysis of Natural Resources of South Africa (taken
~~concurrently Geo 301 - Geological Analysis of Natural Resources of South Africa~~)

Semester(s) previously taught: none

Brief Course Description: (40 words or less)

Geological analysis of natural resources of South Africa with an emphasis on strategic minerals (platinum), solid earth energy resources (coal, tight gas shales), industrial minerals (iron, lead), and bling minerals (diamonds, gold). Students will utilize technology to complete joint projects with students from the University of the Western Cape, South Africa.

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

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

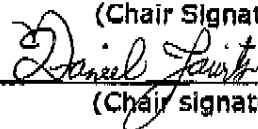
Department Chair: _____



(Chair Signature)

Date: 10-11-10

Discipline Specific Curricula Committee: _____



(Chair signature)

Date: 10/22/2010

Curricula Committee: _____

(Chair Signature)

Date: _____

Effective Year: 2011

Effective Term: Summer ☐ Fall ☒ Spring ☐

EC File # 2301-FS2011-ERP-301

Experimental Course Form (EC)

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

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

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

Department: Business & Information Technology

Discipline and Course Number: ERP 301

Course Title: Enterprise Resource Planning Systems in Small and Medium Size Enterprise

Abbreviated Title (24 spaces or less): ERP for Small, Med Ent.

Instructor(s): Yu-Hsien Chiu

Credit Hours: **Lecture:** 3.0 **Lab:** **Total:** 3.0

Prerequisites: ERP346 or (BUS120 and ERP 246)

Semester(s) previously taught: None

Brief Course Description: (40 words or less)

The course provides an overview of enterprise applications for small and midsize companies. SAP Business One is introduced to illustrate the enterprise-wide application for entrepreneurs, who manage business functions across sales, operation, and financials, all in a single integrated system. Enterprise integration will be examined and examples developed.

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

1) 2) 3)

4) 5) 6)

Department Chair: Carolyn Fisher Date: 10/19/10
(Chair Signature) /

Discipline Specific Curricula Committee: *Danny Heald* Date: 10/20/10
(Chair signature)

Curricula Committee: _____ Date: _____
(Chair Signature)

Effective Year: 2011

Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2302-3p2011-ME-40

Experimental Course Form (EC)

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

Summer and Fall Semester Offerings – January 1

Spring Semester Offerings – August 1

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

Department: Mechanical and Aerospace Engineering

Discipline and Course Number: Mc Eng 401

Course Title: Advanced Digital Design and Manufacturing

Abbreviated Title (24 spaces or less): Digital Design & Manuf

Instructor(s): Dr. Ming C. Leu

Credit Hours: **Lecture:** 3 **Lab:** **Total:** 3

Prerequisites: Mc Eng 308 or Mc Eng 363

Semester(s) previously taught: None

Brief Course Description: (40 words or less)

This course covers selective topics essential to advanced digital design and manufacturing. These topics include freeform modeling, reverse engineering, NC path generation, and immersive digital design and manufacturing. Students will learn theoretical and practical materials on the various topics from the lectures as well as from project exercises.

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

- | | | |
|----|----|----|
| 1) | 2) | 3) |
| 4) | 5) | 6) |

Department Chair: _____
(Chair Signature)

Date: 10/13/10

Discipline Specific Curricula Committee: _____
(Chair signature)

Date: 11/5/10

Curricula Committee: _____
(Chair Signature)

Date: _____

Effective Year: 2011

Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2303-Sp2011-CE-30

Experimental Course Form (EC)

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

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

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

Department: Civil, Architectural and Environmental Engineering

Discipline and Course Number: CE 301

Course Title: Phytoremediation and Natural Treatment Systems: Science and Design

Abbreviated Title (24 spaces or less): Phytoremediation

Instructor(s): Dr. Joel G. Burken

Credit Hours: **Lecture:** 3 **Lab:** **Total:** 3

Prerequisites: CE/EnvE 265, Graduate standing, or consent of instructor

Semester(s) previously taught:

Brief Course Description: (40 words or less)

Student learn the scientific basics of chemical transport in soil and groundwater and learn the fundamental plants 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.

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

1) EnvE 301 WB 2) 3)
4) 5) 6)

Department Chair: [Signature] (Chair Signature)

Date: 10/20/10

Discipline Specific Curricula Committee: [Signature] (Chair signature)

Date: 11/5/10

Curricula Committee: _____ (Chair Signature)

Date: _____

CE/EnvE 301 Phytoremediation

J.G. Burken

Syllabus: Phytoremediation and Natural Treatment Systems: Science and Design
Department of Civil, Architectural and Environmental Engineering
Spring 2011

Lectures: 1.5 hours 2 times/week. Location: TBD - Distance class

Instructor: Dr. Joel G. Burken (burken@mst.edu) Phone: (573) 341-6547
224 Butler-Carlton C.E. Hall Office Hours: ????? and - open door

Text/readings: Required Textbook: None!
We will use the ITRC Phytoremediation guidance document as an initial reference available at:
<http://www.itrcweb.org/Documents/PHYTO-3.pdf>
We will focus mostly on notes I've developed with colleagues (perhaps a text will develop).
We will also be reading a lot of current literature the last 2/3 of the class nad getting inpur form the authors of the papers.

References: Phytoremediation: Degradation and Control of Contaminants, Editors: S.C. McCutcheon and J.L. Schnoor, John Wiley and Sons, 2003 (worth the \$\$ if you plan to work in the field)
Environmental Organic Chemistry, Schwartzbach, Gschwend, and Imboden , Wiley, 1993
Phytoremediation: Methods and Reviews, N. Willey (Editor) Humana Press 2007

Course Description: Student learn the scientific basics of chemical transport in soil and groundwater and learn the fundamental plants 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.

Objectives of this class. Students will be able to:

- evaluate hydrogeologic data to estimate contaminant transport in soil and groundwater.
- Develop a working knowledge of plant processes and physiology that are important in phytoremediation applications.
- critically evaluate phytoremediation approaches and applications on mechanistic and feasibility (technical and economic) levels.
- access information on new scientific breakthroughs in the field and propose potential applications in the remediation field
- communicate knowledge and findings in a technically accurate and professional manner, including conversations with technological leaders in the field

Grading: (Subject to changes)	Quizzes	20 %
	Midterm Exam	10 %
	Final	15 %
	Homework	25 %
	Class project & Presentations	20 %
	Class Participation	10 %

QUIZZES: All quizzes will be announced ahead of time. Quizzes are mostly over innovative technologies covered in class to ensure comprehension of materials before we critically evaluate the papers and applications. The goal is to stay atop of current material. Quizzes will be conceptual, not on design or technical details.

HOMEWORK: Various types, many are research-oriented or mini-project in nature. Students will demonstrate scientific and engineering detail in the homework that represents the expected depth of technical competency. I encourage working together but present separate work when requested. Note Collaborations that might be construed as cheating. Show originality in each person's work to show

CE/EnvE 301 Phytoremediation

J.G. Burken

that all parties gained an understanding of the objectives behind each homework project or assignment. If the final product of working together is very similar, briefly describe each contribution. Quality of presentation is always important. Use proper units, present the problem and conceptual solution clearly, label any spreadsheet work clearly.

PROJECT/PRESENTATION: Each student or teams will pick one of the topic below (Week 7 and on) and do a detailed, critical review not only of the paper assigned for the week, but related articles and applications. This will be presented to the class. Presentations are expected to be thorough and professional. We anticipate linking up with some author's via distance technology and inviting a couple to town also.

EXAMS: Midterms will be closed book and in 2 parts. Definitions and concepts will be covered first and then problems of a technical, quantifiable nature. Final may be take home in nature.. to be determined.

Week	Reading	Topics
1	Groundwater and contaminant handout	Background: Contaminant physical-chemical characteristics. Contaminant solubility, partitioning, phase transfers
2	Handout, epa.gov/superfund	The Laws! CERCLA, RCRA, Clean Water Act Plant processes intro
3	Chapter Raven's book ITRC Phyto Section	Plant physiology basics chemical reactions & Oxidation/reduction.
4	ITRC Phyto Section	Rhizoremediation transformation reaction mechanisms under different electron acceptor conditions
5	ITRC Phyto Section JGB's Green Liver chapter	Plant uptake of contaminants and fate in plants
6	ITRC Phyto Section JGB's Phytovolatilization	Vapor phase transport and fate
7	ITRC Phyto Section Current Literature	Metals transport and fate Hyperaccumulators – Rufus Chaney
8	Current Literature	Novel mechanisms in contaminant uptake and transport - Jason White or Barb Zeeb
9	Current Literature	Endophytic degradation: Novel plant-bacterial interactions - Jaco Vongronsfeldt or Lee Newman
10	Current Literature	Selenium and metalloids uptake and potential volatilization - Norm Terry or Gary Banuelos
11	ITRC Alternative Capping Current Literature	Alternative Capping & Leachate treatment - Ron Zalesny or Steve Rock
12	ITRC Constructed wetlands Current Literature	Constructed wetlands for municipal wastewater - Scott Wallace
13	ITRC Constructed wetlands Current Literature	Constructed wetlands for metals - Rinus Otte or Mark Fitch
14	Current Literature	Full Scale systems. Decade of experiences – Lou Licht
15	Open Topics	Coollest thing anyone can find throughout the year that we do not yet cover.
16	Final,	(? Take home week earlier?)

I like quotes, Feel free to give me good ones. Here's one for you:

"I am a member of a fragile species, still new to the earth, the youngest of creatures of any scale, here only a few moments as evolutionary time is measured, a juvenile species, a child of a species. We are only tentatively set in place, error-prone, at risk of fumbling, in real danger at the moment of leaving behind only a thin layer of our fossils, radioactive at that." -Lewis Thomas, From *The Fragile Species*

EC File # 2304-Sp2011-MSE-42

Effective Year: Spring 2011

Effective Term: Summer ☐ Fall ☐ Spring ☒

Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved SP2009 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: Materials Science and Engineer

Discipline and Course Number: MSE 401

Course Title: Advanced Principles of Microstructural Design

Abbreviated Title (24 spaces or less): Adv Microstructural

Instructor(s): Dr. Rajiv S. Mishra

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

Prerequisites:

Semester(s) previously taught: FS2004; SP2006

Brief Course Description: (40 words or less)

This course will introduce the microstructural principles that can be used to design advanced materials. It will help students learn about the principles and microstructural design approaches. In addition, they will design a theoretical microstructure for high efficiency structure.

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

1) 2) 3)

4) 5) 6)

Department Chair: _____

(Chair Signature)

Date: 10/22/10

Discipline Specific Curricula Committee: _____

(Chair signature)

Date: 11/5/16

Curricula Committee: _____

(Chair Signature)

Date: _____

EC File # 2305-Sp2011-Geo-401

Effective Year: 2011
Effective Term: Summer ☐ Fall ☐ Spring ☒

Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved SP2009 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: Dept. of Geology&Engineering

Discipline and Course Number: Geo 401

Course Title: Advanced depositional systems

Abbreviated Title (24 spaces or less): Adv depo systems

Instructor(s): Wan Yang

Credit Hours:	Lecture: 3	Lab:	Total:
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Prerequisites: Geo 223

Semester(s) previously taught: None

Brief Course Description: (40 words or less)

Development of three dimensional depositional models using Walther's Law, Walther's Warning and seismic stratigraphy. Emphasis on overall geometries and internal porosity and permeability characteristics of aquifers and hydrocarbon reservoirs. Literature research, class project, and class presentation are required. (Currently teaching as a 332, want to create a 400 level.)

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

1) ~~Geo 332~~ 2) 3)

4) 5) 6)

Department Chair: Ralph E. Hori (Chair Signature)

Date: 10-25-10

Discipline Specific Curricula Committee: Daniel Smith (Chair Signature)

Date: 11/5/2010

Curricula Committee: _____ (Chair Signature)

Date: _____

10/27/10

(Revised 10/12/2010)

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EC File # *2306-Sp2011-Geo-401*

Effective Year: 2011
Effective Term: Summer ☐ Fall ☐ Spring ☒

Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved SP2009 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: Dept. of Geology&Engineering

Discipline and Course Number: Geo 401

Course Title: ~~Advanced~~ stratigraphy and basin evolution

Abbreviated Title (24 spaces or less): ~~Adv~~ strat&basin

Instructor(s): Wan Yang

Credit Hours: Lecture: 3 Lab: Total:

Prerequisites: Geo 223, *GEO 220*

Semester(s) previously taught: None

Brief Course Description: (40 words or less)

Advanced topics in sedimentary geology and time-stratigraphy, especially sequence stratigraphy. Concepts, models, and critical thinking in sequence stratigraphic analysis of basin fills by integrating microscopic, outcrop, well, and seismic data and observations. Applications in basin analysis and groundwater and petroleum exploration. Class project and presentations are required.

(Currently teaching as 324 want to create a 400 level)

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

1) ~~Geo 324~~ 2) 3)

4) 5) 6)

Department Chair: *Ralph E Hori* (Chair Signature)

Date: *10-25-10*

Discipline Specific Curricula Committee: *David J...* (Chair signature)

Date: *11/5/2010*

Curricula Committee: _____ (Chair Signature)

Date: _____

10/27/10

(Revised 10/12/2010)