Minutes of the Campus Curricula Committee Meeting
May 9, 2017
9:00am, 106 Parker Hall
(For Faculty Senate Meeting of June 15, 2017)

Attendees: Petra Dewitt, Barry Flachsbart, Gearoid MacSithigh, Ilene Morgan, Steve Raper, Tom Schuman, Kristy Giacomelli and Brittany Parnell

The following curriculum forms were discussed and approved:

Course Change Forms:

File 1680.1	CER ENG 4220: Mechanical Properties of Ceramics
File 4413	CER ENG 4410: Introduction to Integrated Computational Materials Engineering
File 4414	CER ENG 6410: Advanced Integrated Computational Materials Engineering
File 537.1	COMP SCI 6303: Pervasive Computing
File 1741.1	COMP SCI 6600: Formal Methods in Computer Security
File 2186.1	ELEC ENG 2800: Electrical Circuits
File 90.1	ELEC ENG 3340: Basic Programmable Logic Controllers
File 4403	ELEC ENG 5325: Applied Nonlinear Control
File 4423	GEOLOGY 4085: Internship
File 4424	GEOLOGY 5085: Internship
File 4415	GEOLOGY 5681: Lidar Principles and Application
File 4425	GEOLOGY 6085: Internship
File 385.1	GEOLOGY 6651: Granite and Rhyolite Petrogenesis
File 1245.3	MECH ENG 5212: Introduction to Finite Element Analysis
File 1974.1	MET ENG 1210: Chemistry of Materials
File 874.1	MIN ENG 1912: Principles of Mining Engineering
File 2520.1	MIN ENG 2126: Introduction to Mining Safety
File 2268.1	MIN ENG 2412: Principles of Mineral Processing
File 1534.1	MIN ENG 2925: Surveying for Mineral Engineers
File 3913	MIN ENG 3913: Mineral Identification and Exploration
File 1944.6	MIN ENG 4096: Computer Aided Mine Design
File 1128.7	MIN ENG 4097: Capstone Design Project
File 2260.5	MIN ENG 4113: Mine Atmosphere Control
File 1302.5	MIN ENG 4512: Mine Management
File 1726.1	MIN ENG 4522: Ore Reserve Analysis and Geostatistics
File 1145.4	MIN ENG 4912: Mine Power and Drainage
File 1524.1	MIN ENG 4932: Underground Mining Methods and Equipment
File 682.1	MIN ENG 4933: Surface Mining Methods and Equipment

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File 408.1	MIN ENG 5612: Principles of Explosives Engineering
File 300.1	MIN ENG 5913: Advanced Computer Aided Mine Design
File 134.1	NUC ENG 4259: Licensing of Nuclear Power Plants
File 2371.1	NUC ENG 4496: Nuclear System Design I
File 4421	PET ENG 2002: Cooperative Work Training
File 1367.4	SYS ENG 6103: Systems Life Cycle Costing

Degree Change Forms:

File 146.17	BIO SC-BA: Biological Sciences BA
File 16.21	CHEM-BS: Chemistry BS
File 28.16	CMP SC-BS: Computer Science BS
File 29.9	CMP SC-MI: Computer Science Minor
File 149.21	CR ENG-BS: Ceramic Engineering BS
File 242	PROPOSED: Latin American Studies for Technical Applications Minor
File 95.16	MI ENG-BS: Mining Engineering BS
File 169.7	MI ENG-MS: Mining Engineering MS
File 90.24	MT ENG-BS: Metallurgical Engineering BS
File 192.15	PSYCH-BA: Psychology BA
File 193.17	PSYCH-BS: Psychology BS

Experimental Course Forms:

File 4405	CIV ENG 5001.001: Wind Engineering
File 4404	CIV ENG 6001.005: Soil Mechanics for Unsaturated Soils
File 4412	CIV ENG 6001.006: Understanding Rheology of Cement-Based Materials
File 4419	COMP ENG 6001.001: Advanced Computational Intelligence
File 4410	COMP SCI 5001.001: Introduction to Deep Learning
File 4409	COMP SCI 5001.002: Introduction to Machine Learning
File 4397	ELEC ENG 5001.005: Design and Innovation for Engineers
File 4418	ELEC ENG 6001.003: Advanced Computational Intelligence
File 4401.3	ENGLISH 3001.004: Costa Rica in Text
File 4399	GEO ENG 5001:002: Research Methods in Groundwater and Surface Water
File 4398	PET ENG 6001.006: Advanced Digital Applications in Petroleum Engineering
File 4422	PET ENG 6001.005: Flow through Porous Media
File 4420	PET ENG 6001.007: Numerical Methods for Reservoir Simulation

The following form was tabled pending revision of the Financial Engineering certificate:

File 4408	ENG MGT 6216: Financial Data Analysis

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Steve Raper was tentatively elected to be Chair of the Campus Curricula Committee for 2017-18.

The Campus Curricula Committee proposes that the following resolution be adopted by the Faculty Senate for inclusion into all undergraduate engineering degree requirements:

The degree program shall include a minimum of 21 credit hours as follows:

- ENGLISH 1120
- HISTORY 1200 **or** HISTORY 1300 **or** HISTORY 1310 **or** POL SCI 1200
- ECON 1100 **or** ECON 1200
- Communication Elective: ENGL 1160 **or** ENGL/TCH COM 1600 **or** ENGL 3560 **or** SP&M 1185
- The remaining minimum of 9 additional credit hours must be chosen from disciplines in the humanities and social sciences.* Humanities courses are defined as those in: Art, English and Technical Communication, Etymology, Foreign Languages, Music, Philosophy, Speech and Media Studies, and Theatre. Social Sciences courses are defined as those in: Economics, History, Political Science, and Psychology. Some curricula may require the completion of a specified number of upper-level Humanities/Social Sciences (H/SS) courses. Upper-level H/SS courses are defined as those at the 2000-level or above, and that require as a prerequisite the successful completion of a lower-level H/SS course. Study abroad courses may count as upper-level H/SS courses, even if they do not have a prerequisite. H/SS courses numbered 2001, 3001, and 4001 (experimental courses) may also be used to complete these elective requirements.

Courses in business, education, information science and technology, or any other discipline not listed above will **not** satisfy the humanities/social sciences elective requirement, although such courses may count toward general education requirements. Transfer credits from other universities in sociology and general humanities may count as humanities or social science electives.

*ENGL 1160, ENGL/TCH COM 1600, ENGL 3560, and SP&M 1185 do **not** count toward the remaining minimum of 9 additional credit hours in humanities/social sciences electives.

The meeting adjourned at 10:30am.

Ilene H. Morgan

Ilene H. Morgan, Chair
Missouri S&T Campus Curricula Committee

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Course Inventory Change Request

Date Submitted: 04/18/17 4:17 pm

Viewing: **CER ENG 4220 : Mechanical Properties Of Ceramics**

File: 1680.1

Last edit: 05/11/17 10:05 am

Changes proposed by: smiller

Programs referencing this course	CR ENG-BS: Ceramic Engineering BS
Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	4220
Title	Mechanical Properties Of Ceramics
Abbreviated Course Title	Mech Prop Of Ceramics
Catalog Description	

In Workflow

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

Approval Path

1. 04/18/17 4:20 pm mjokeefe: Approved for RMATSENG Chair
2. 04/19/17 9:38 am Lahne Black (lahne): Approved for CCC Secretary
3. 04/19/17 9:40 am sraper: Approved

for Engineering DSCC Chair

4. 04/20/17 4:12 pm Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 12:33 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:34 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

This course will treat the theory and testing practice related to design based on the mechanical properties of ceramics. The course also includes ~~a~~ laboratory ~~consisting of~~ experiments for the characterization of the mechanical properties of ceramics.

Prerequisites

A ~~"C" or better~~ grade **of "C" or better** in Civ Eng 2210.

Field Trip Statement

Credit Hours	LEC: 3	LAB: **0** ~~1~~	IND: 0	RSD: 0
Total: **3** ~~4~~				

Required for Majors	**Yes** ~~No~~

Elective for Majors	No

Justification for change:

Remove lab component to allow curriculum changes

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1680

Course Inventory Change Request

New Course Proposal

Date Submitted: 03/17/17 9:31 am

Viewing: **CER ENG 4410 : Introduction to Integrated Computational Materials Engineering**

File: 4413

Last edit: 04/10/17 11:26 am

Changes proposed by: smiller

Programs referencing this course

CR ENG-BS: Ceramic Engineering BS

Requested Effective Change Date	Fall 2017
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	4410
Title	Introduction to Integrated Computational Materials Engineering
Abbreviated Course Title	Intro to ICME

Catalog Description

In Workflow

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

Approval Path

1. 03/17/17 10:15 am
   mjokeefe: Approved for RMATSENG Chair
2. 03/17/17 12:42 pm
   Kristy Giacomelli (kristyg):

Approved for CCC Secretary

3. 04/10/17 11:26 am
   sraper: Approved for Engineering DSCC Chair
4. 04/10/17 2:21 pm
   Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 1:22 pm
   Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:35 pm
   Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

This course will provide an introduction to different computational tools for studying materials at different length scales. Several atomistic, microscale, and continuum models will be introduced and bridging between different modeling scales will be discussed. This course has a computational laboratory to build models and run simulations.

Prerequisites

A grade of "C" or better in both Cer Eng 3220 and Math 3304, and in either Cer Eng 2110 or Met Eng 2110.

Field Trip Statement

Credit Hours Total: 3	LEC: 2	LAB: 1	IND: 0	RSD: 0
Required for Majors	Yes			
Elective for Majors	No			

Justification for new course:

Required for latest (Fall 2017) Ceramic Engineering curriculum.

Semesters previously offered as an experimental course

Spring semester of 2013, 2014, and 2015 (as MSE 5001)

Co-Listed Courses:

Course Reviewer Comments

sraper (04/10/17 11:26 am): Shortened original prereq statement but made it more understandable.

Key: 4413

Course Inventory Change Request

New Course Proposal

Date Submitted: 03/17/17 9:32 am

Viewing: **CER ENG 6410 : Advanced Integrated Computational Materials Engineering**

File: 4414

Last edit: 05/10/17 1:22 pm

Changes proposed by: smiller

Requested Effective Change Date	Fall 2017
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	6410
Title	Advanced Integrated Computational Materials Engineering
Abbreviated Course Title	Advanced ICME

Catalog Description

In Workflow

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

Approval Path

1. 03/17/17 10:15 am
   mjokeefe: Approved for RMATSENG Chair
2. 03/17/17 12:42 pm
   Kristy Giacomelli (kristyg):

Approved for CCC Secretary

3. 04/10/17 11:30 am
   sraper: Approved for Engineering DSCC Chair
4. 04/10/17 2:21 pm
   Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 1:22 pm
   Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:35 pm
   Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Students will learn of different computational tools for studying materials at different length scales. The bridging between different modeling scales will be discussed. This course has a computational laboratory to build models and run simulations. Students will complete a final project by integrating two length-scale models.

Prerequisites

A grade of “B” or better grade in Math 3304.

Field Trip

Statement

Credit Hours Total: 3	LEC: 2	LAB: 1	IND: 0	RSD: 0
Required for Majors	No			
Elective for Majors	Yes			

Justification for new course:

Graduate level course to accompany Cer Eng 4410.

Semesters previously offered as an experimental course

Spring semesters of 2013, 2014, 2015 as MSE 6001

Co-Listed Courses:

Course Reviewer Comments

sraper (04/10/17 11:30 am): Took out the word Graduate in course description. Left "B" or better prereq as is, but would like to discuss if this is appropriate for a graduate level course. At ug level consensus is that it is not appropriate.

Key: 4414

Course Inventory Change Request

Date Submitted: 03/23/17 12:15 pm

Viewing: **COMP SCI 6303 : Pervasive Computing**

File: 537.1

Last edit: 05/11/17 12:36 pm

Changes proposed by: tauritzd

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	6303
Title	Pervasive Computing
Abbreviated Course Title	Pervasive Computing

Catalog Description

In Workflow

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

Approval Path

1. 03/23/17 3:54 pm
   Sajal Das (sdas): Approved for RCOMPSCI Chair
2. 03/24/17 12:00 pm
   Kristy Giacomelli (kristyg): Approved for CCC Secretary

3. 04/10/17 2:38 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 2:44 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 1:25 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:36 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Pervasive computing aims to seamlessly integrate computing with our everyday activities, so that people do not need to be aware of computing artifacts. This course will introduce various techniques needed to realize pervasive computing, such as position tracking and ad-hoc networking.

Prerequisites

A **grade of** "C" or better ~~grade~~ in **one of** ~~either~~ Comp Sci **4600,** ~~4600 or~~ Comp **Sci 5600, or Comp** Eng 5410.

Field Trip Statement

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

Required for Majors	No
Elective for Majors	**Yes** ~~No~~

Justification for change:

In the 3-digit course numbering system, the first prereq was Comp Sci 365 which was dual-mapped to Comp Sci 4600 and Comp Sci 5600, but the prereq was mapped to just Comp Sci 4600. This corrects that mapping by listing both of the 4-digit dual-mapped courses as prereqs.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 537

Course Inventory Change Request

Date Submitted: 03/31/17 2:56 pm

Viewing: COMP SCI 6600 : Formal Methods in Computer Security

File: 1741.1

Last edit: 05/10/17 1:40 pm

Changes proposed by: tauritzd

Requested Effective Change Date	**Spring 2018** ~~Fall 2014~~
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	6600
Title	**Formal Methods in** Computer Security
Abbreviated Course Title	**Formal Methods in CmpSec** ~~Computer Security~~

Catalog Description

In Workflow

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

Approval Path

1. 03/31/17 3:30 pm
   Sajal Das (sdas): Approved for RCOMPSCI Chair
2. 04/06/17 11:19 am
   Lahne Black (lahne): Approved for CCC Secretary

3. 04/10/17 2:49 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 2:50 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 1:40 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:37 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

The course presents various vulnerabilities and threats to information in cyberspace and the principles and techniques for preventing and detecting threats, and recovering from attacks. The course deals with various **formal models** ~~aspects and layers~~ of **advanced information flow security.** ~~security:~~ **A major project will relate theory to practice.** ~~data-level, network-level, system-level, and application-level security.~~

Prerequisites

A **grade of** "C" or better ~~grade~~ in both Comp Sci 3600 and Comp Sci 5200.

Field Trip Statement

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

Total: 3

Required for Majors	No
Elective for Majors	**Yes** ~~No~~

Justification for change:

The course has been taught as a formal methods course since 2014, so the proposed title and description more accurately reflect the current content.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1741

Course Inventory Change Request

Date Submitted: 04/05/17 2:15 pm

Viewing: **ELEC ENG 2800 : Electrical Circuits**

File: 2186.1

Last edit: 05/16/17 8:53 am

Changes proposed by: martins

Programs referencing this course

- AE ENG-BS: Aerospace Engineering BS
- AP MATH-BS: Applied Mathematics BS
- ENG MG-BS: Engineering Management BS
- MC ENG-BS: Mechanical Engineering BS
- MT ENG-BS: Metallurgical Engineering BS

Other Courses referencing this course

In The Prerequisites:

- AERO ENG 4882 : Experimental Methods in Aerospace Engineering I

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	2800
Title	

In Workflow

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

Approval Path

1. 04/06/17 3:53 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 04/08/17 4:04 pm Kristy Giacomelli (kristyg): Approved for CCC Secretary

Electrical Circuits

Abbreviated Course Title	Electrical Circuits
Catalog Description	

3. 04/18/17 8:41 am sraper: Approved for Engineering DSCC Chair
4. 04/20/17 4:13 pm Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 1:44 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:38 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair
7. 05/16/17 8:40 am Kristy Giacomelli (kristyg): Rollback to Campus Curricula Committee Chair for FS Meeting Agenda
8. 05/16/17 8:54 am Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Taught ~~Alternating and direct current circuits taught~~ primarily as an **alternating current (AC) circuits** ~~a-c~~ course with **direct current (DC) circuits** ~~d-c~~ as **a** special case. Current, **voltage,** ~~voltage~~ and power relations; complex **algebra; voltage** ~~algebra, network theorems; voltage~~ and power relations in polyphase **circuits with an emphasis on Transformers and Induction Machines.** ~~circuits.~~ Not for electrical **engineering** majors.

Prerequisites

Math 3304 or 3329; Physics 2135.

Field Trip Statement

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

Required for Majors	No
Elective for Majors	**Yes** ~~No~~

Justification for change:

To update the course description to better fit the course content.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (05/16/17 8:40 am): Rollback: Rollback per email.

imorgan (05/16/17 8:51 am): Made a small wording correction in consultation with

Dr. Raper.

Key: 2186

Course Inventory Change Request

Date Submitted: 04/05/17 1:28 pm

Viewing: **ELEC ENG 3340 : Basic Programmable Logic Controllers ~~Controllers For Factory Automation~~**

File: 90.1

Last edit: 05/10/17 1:46 pm

Changes proposed by: kte

Programs referencing this course

- ARC ENG-BS: Architectural Engineering BS
- AUTOENG-MI: Minor in Automation Engineering
- EL ENG-BS: Electrical Engineering BS

Other Courses referencing this course

In The Prerequisites:

- CHEM ENG 5190 : Plantwide Process Control
- ELEC ENG 4380 : Practicum in Automation Engineering
- ELEC ENG 5340 : Advanced PLC
- ELEC ENG 5345 : PLC Motion Control
- ELEC ENG 5350 : Plantwide Process Control

Requested Effective Change Date	**Spring 2018** ~~Fall 2014~~
Department	Electrical and Computer Engineering

In Workflow

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

Approval Path

1. 04/06/17 3:54 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 04/08/17 4:04 pm Kristy Giacomelli (kristyg): Approved for CCC Secretary

Discipline Electrical Engineering (ELEC ENG)

Course Number 3340

Title

Basic Programmable Logic Controllers ~~Controllers For Factory Automation~~

Abbreviated Course Title **Basic PLC** ~~Controllers/Factory Auto~~

Catalog Description

Introduction to programmable **automation in manufacturing,** ~~automation,~~ programmable logic controller (PLC) hardware, programming languages and techniques, **PID** closed-loop **control, electrical code.** ~~strategies using PLC's, sensors, transducers.~~ Case studies. Laboratory **exercises.** ~~experiments.~~

Prerequisites

Preceded or accompanied by either Elec Eng 2120 **or Elec** ~~and Comp~~ Eng **2800.** ~~2210 each with a grade of "C" or better.~~

Field Trip Statement

Credit Hours LEC: 2 LAB: 1 IND: 0 RSD: 0 Total: 3

3. 04/18/17 8:41 am sraper: Approved for Engineering DSCC Chair
4. 04/20/17 4:13 pm Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 1:46 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:39 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Required for Majors	No
Elective for Majors	**Yes** ~~No~~

Justification for change:

New title better describes course content. Revised description to reflect updated course content. Unnecessary prerequisite of Comp Eng 2210 deleted, circuits changed to a co-requisite as it is only needed for the electrical code material covered in the last few weeks of the semester. Co-requisite for non-Elec Eng students added as Elec Eng 3340 is required for the Automation Engineering minor, which is also for Chem Eng and Mech Eng students.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 90

Course Inventory Change Request

New Course Proposal

Date Submitted: 02/28/17 9:59 am

Viewing: **ELEC ENG 5325 : Applied Nonlinear Control**

File: 4403

Last edit: 05/10/17 1:49 pm

Changes proposed by: martins

Requested Effective Change Date	Spring 2018
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	5325
Title	Applied Nonlinear Control
Abbreviated Course Title	App Nonlinear Control

Catalog Description

In Workflow

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

Approval Path

1. 02/28/17 5:33 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 03/01/17 8:06 am Kristy Giacomelli (kristyg): Approved for CCC Secretary

3. 03/14/17 2:54 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 2:22 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 1:49 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:40 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Review of State Variable Models, Nonlinear Model and Phenomena, Lyapunov Stability, Phase Plane Analysis, Feedback Linearization, Sliding Mode and Backstepping Control, and Control Applications

Prerequisites

Elec Eng 3320 or graduate standing.

Field Trip Statement

N/A

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

Total: 3

Required for Majors	No
Elective for Majors	Yes

Justification for new course:

to expland our graduate control course offerings

Semesters previously offered as an experimental course

SP 2015 and SP 2016

Co-Listed Courses:

Course Reviewer Comments

Key: 4403

Course Inventory Change Request

New Course Proposal

Date Submitted: 04/11/17 2:52 pm

Viewing: **GEOLOGY 4085 : Internship**

File: 4423

Last edit: 05/11/17 12:41 pm

Changes proposed by: jhogan

Requested Effective Change Date	Fall 2017
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Geology (GEOLOGY)
Course Number	4085
Title	Internship
Abbreviated Course Title	Internship

Catalog Description

In Workflow

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

Approval Path

1. 04/11/17 3:06 pm Francisca Oboh-Ikuenobe (ikuenobe): Approved for RGEOSENG Chair
2. 04/13/17 2:31 pm Lahne Black (lahne): Approved for CCC Secretary

3. 04/19/17 11:35 am
   Ilene Morgan (imorgan): Approved for Sciences DSCC Chair
4. 04/20/17 4:12 pm
   Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 1:54 pm
   Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:41 pm
   Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Students will select, with the advice of their advisor, appropriate problems for investigation through practical application of fundamental geoscience principles. The problems selected must provide higher level experiential learning. Assessment is based upon the quality of written and oral presentations and supervisor's evaluation.

Prerequisites

Prerequisite: Advisor's approval.

Field Trip

Statement

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

Justification for new course:

1) This is an approved course in Geological Engineering. We would like to offer the same opportunity to Geology students. This course could be co-listed if necessary (see below). We prefer a higher level course number to reflect students will need a certain amount of course work completed prior to setting up an independent study.

2) We have new MOU's with the Missouri Geological Survey and the National Forest Survey here in Rolla. This course will provide practical experiential learning opportunities for our students during the fall, spring, and summer semesters without completely disrupting their progress to completing their degree. This is not the same as "Co-Op" but will provide the student with internship experience.

3) Presently there is collaborative research between our agencies and this would provide students and opportunity to have their contributions formally assessed and recognized on their transcripts.

Semesters previously offered as an experimental course

This course is modeled after courses in our department successfully offered through the Geological Engineering program. We are therefore, respectfully requesting, that this course be exempted from the "experimental" course procedure.

Co-Listed Courses:

Course Reviewer

Comments

imorgan (04/13/17 2:37 pm): Changed effective term to FS 2017.

imorgan (04/19/17 11:35 am): It might be easier to approve this without the co-list and add the co-list later if appropriate.

imorgan (05/11/17 12:41 pm): Changed from 4002 to 4085 to be consistent with numbering conventions.

Key: 4423

Course Inventory Change Request

New Course Proposal

Date Submitted: 04/11/17 3:01 pm

Viewing: **GEOLOGY 5085 : Internship**

File: 4424

Last edit: 05/10/17 1:55 pm

Changes proposed by: jhogan

Requested Effective Change Date	Fall 2017
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Geology (GEOLOGY)
Course Number	5085
Title	Internship
Abbreviated Course Title	Internship

Catalog Description

In Workflow

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

Approval Path

1. 04/11/17 3:08 pm Francisca Oboh-Ikuenobe (ikuenobe): Approved for RGEOSENG Chair
2. 04/13/17 2:32 pm Lahne Black (lahne): Approved for CCC Secretary

3. 04/19/17 11:36 am
   Ilene Morgan (imorgan): Approved for Sciences DSCC Chair
4. 04/20/17 4:12 pm
   Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 1:55 pm
   Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:41 pm
   Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Students will select, with their committee's advice, problems for investigation and preparation of a graduate research proposal. Problems must provide higher level experiential learning consistent with a graduate degree in geology. Assessment is based upon the quality of written and oral presentations and supervisor's evaluation. Repeatable for credit.

Prerequisites

Graduate Standing.

Field Trip

Statement

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

Justification for new course:

1) This is an approved course in Geological Engineering. We would like to offer the same opportunity to Geology graduate students. This course could be co-listed if necessary.

2) We have new MOU's with the Missouri Geological Survey and the National Forest Survey here in Rolla. This course will provide opportunities for our graduate students to explore research opportunities that are of scientific and/or practical interest to faculty and to government agencies (DNR, NFS, USGS).

3) Presently there is collaborative research between our agencies and this would provide students and opportunity to have their contributions formally assessed and recognized on their transcripts.

Semesters previously offered as an experimental course

This course is modeled after courses in our department successfully offered through the Geological Engineering program. We are therefore, respectfully requesting, that this course be exempted from the "experimental" course procedure.

Co-Listed Courses:

Course Reviewer Comments

imorgan (04/13/17 2:38 pm): Changed effective term to FS 2017.

imorgan (04/19/17 11:36 am): It might be easier to approve this without the co-list and add the co-list later if appropriate.

Key: 4424

Course Inventory Change Request

New Course Proposal

Date Submitted: 03/16/17 3:25 pm

Viewing: **GEOLOGY 5681 : Lidar Principles and Application**

File: 4415

Last edit: 05/11/17 12:44 pm

Changes proposed by: liukh

Requested Effective Change Date	Fall 2017
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Geology (GEOLOGY)
Course Number	5681
Title	Lidar Principles and Application
Abbreviated Course Title	Lidar Princ App

Catalog Description

In Workflow

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

Approval Path

1. 03/16/17 4:47 pm Francisca Oboh-Ikuenobe (ikuenobe): Approved for RGEOSENG Chair
2. 03/17/17 12:42 pm Kristy Giacomelli (kristyg):

Approved for CCC Secretary

3. 04/19/17 11:41 am
   Ilene Morgan (imorgan): Approved for Sciences DSCC Chair
4. 04/20/17 4:12 pm
   Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 2:00 pm
   Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:44 pm
   Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Provides a comprehensive understanding of light detection and ranging (lidar) technology as it has been developed for commercial use; various methods of deploying technology for collection of data for mapping, engineering and science, and application of the data using specialized software for editing and processing point cloud data. Assumes GIS experience.

Prerequisites

Senior or graduate standing.

Field Trip Statement

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

Justification for new course:

Lidar is a newer technology that has been developed and commercialized over the last 15 years for the collection of high-resolution elevation data. These data are the primary source elevation data for the U.S. Geological Survey's 3D Elevation Program with a goal to acquire lidar for the entire conterminous U.S. in eight years. Lidar point cloud data obtained through this program are available online at no charge to the public. Furthermore, non-governmental industries have embraced this technology and it is being applied in mining, civil engineering, geologic engineering, infrastructure management, and geologic mapping. Since lidar has wide ranging application in both science and engineering, it is necessary that students have opportunities for training on the value and limitation of this new technology.

Semesters previously offered as an experimental course

Offered as experimental (5001)course:
Fall 2015—10 students, Geology and Geologic Engineering majors
Fall 2016—12 students, Geology, Geologic Engineering, and Mine Engineering majors

Co-Listed Courses:

Course Reviewer

Comments

imorgan (04/19/17 11:40 am): The prerequisite in FS 2016 was "Senior or graduate standing".

Key: 4415

Course Inventory Change Request

New Course Proposal

Date Submitted: 04/11/17 3:05 pm

Viewing: **GEOLOGY 6085 : Internship**

File: 4425

Last edit: 05/10/17 1:55 pm

Changes proposed by: jhogan

Requested Effective Change Date	Fall 2017
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Geology (GEOLOGY)
Course Number	6085
Title	Internship
Abbreviated Course Title	Internship

Catalog Description

In Workflow

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

Approval Path

1. 04/11/17 3:08 pm Francisca Oboh-Ikuenobe (ikuenobe): Approved for RGEOSENG Chair
2. 04/13/17 2:32 pm Lahne Black (lahne): Approved for CCC Secretary

3. 04/19/17 11:35 am
   Ilene Morgan (imorgan): Approved for Sciences DSCC Chair
4. 04/20/17 4:12 pm
   Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 1:56 pm
   Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:45 pm
   Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Students will select, with their committee's advice, problems for investigation and preparation of a graduate research proposal. Problems must provide higher level experiential learning consistent with a graduate degree in geology. Assessment is based upon the quality of written and oral presentations and supervisor's evaluation. Repeatable for credit.

Prerequisites

Graduate standing.

Field Trip

Statement

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

Justification for new course:

1) This is an approved course in Geological Engineering. We would like to offer the same opportunity to Geology graduate students. This course could be co-listed if necessary.

2) We have new MOU's with the Missouri Geological Survey and the National Forest Survey here in Rolla. This course will provide opportunities for our students during the fall, spring, and summer semesters, to explore opportunities for research projects with local government agencies without completely disrupting their progress to completing their degree.

3) Presently there is collaborative research between our agencies and this would provide students and opportunity to have their contributions formally assessed and recognized on their transcripts.

Semesters previously offered as an experimental course

This course is modeled after courses in our department successfully offered through the Geological Engineering program. We are therefore, respectfully requesting, that this course be exempted from the "experimental" course procedure.

Co-Listed Courses:

Course Reviewer Comments

imorgan (04/13/17 2:50 pm): Changed effective date to FS 2017.

imorgan (04/19/17 11:34 am): It might be easier to approve this without the co-list and add the co-list later if appropriate.

Key: 4425

Course Inventory Change Request

Date Submitted: 04/11/17 3:15 pm

Viewing: GEOLOGY 6651 ~~5651~~: Granite and Rhyolite Petrogenesis

File: 385.1

Last edit: 04/13/17 3:04 pm

Changes proposed by: jhogan

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Geology (GEOLOGY)
Course Number	**6651** ~~5651~~
Title	Granite and Rhyolite Petrogenesis
Abbreviated Course Title	Granite Petrogenesis

Catalog Description

In Workflow

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

Approval Path

1. 04/11/17 3:18 pm Francisca Oboh-Ikuenobe (ikuenobe): Approved for RGEOSENG Chair
2. 04/13/17 2:32 pm Lahne Black (lahne): Approved for CCC Secretary

3. 04/19/17 11:33 am
   Ilene Morgan (imorgan): Approved for Sciences DSCC Chair
4. 04/20/17 4:12 pm
   Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 2:00 pm
   Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:46 pm
   Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

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.

Prerequisites

Geology 2620.

Field Trip Statement

A research paper is required as well as a field trip at the student's expense.

Credit Hours LEC: 3 LAB: 1 IND: 0 RSD: 0

Total: 4

Required for Majors	No
Elective for Majors	No

Justification for change:

I am requesting that this course number be changed to correct what was likely a typographical error. It was originally intended to be a 6000 level course. No other changes are being proposed.

Thank you.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

imorgan (04/13/17 3:04 pm): Changed effective date to FS 2017.

Key: 385

Course Inventory Change Request

Date Submitted: 04/10/17 4:12 pm

Viewing: **MECH ENG 5212 : Introduction to Finite Element Analysis**

File: 1245.3

Last approved: 04/25/14 3:05 pm

Last edit: 05/10/17 2:01 pm

Changes proposed by: nisbett

Catalog Pages referencing this course

Mechanical Engineering

Programs referencing this course

AP MATH-BS: Applied Mathematics BS

MC ENG-BS: Mechanical Engineering BS

MT ENG-BS: Metallurgical Engineering BS

Other Courses referencing this course

In The Catalog Description:

AERO ENG 5212 : Introduction to Finite Element Analysis

In The Prerequisites:

AERO ENG 6212 : Advanced Finite Element Analysis

MECH ENG 6212 : Advanced Finite Element Analysis

In Workflow

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

Approval Path

1. 04/10/17 4:23 pm James Drallmeier (drallmei): Approved for RMECHENG Chair
2. 04/10/17 4:25 pm Kristy Giacomelli (kristyg): Approved for CCC Secretary

Requested Effective Change Date	**Spring 2018** ~~Fall 2014~~
Department	Mechanical & Aerospace Engineering
Discipline	Mechanical Engineering (MECH ENG)
Course Number	5212
Title	Introduction to Finite Element Analysis
Abbreviated Course Title	Intro Finite Element Analysis

Catalog Description

3. 04/18/17 8:43 am sraper: Approved for Engineering DSCC Chair
4. 04/20/17 4:12 pm Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 2:01 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:46 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

History

1. Apr 25, 2014 by lahne (1245.1)

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. Two-dimensional problems. Computer implementation and use of commercial finite element codes.

Prerequisites

Math 3304; senior or graduate standing. ~~Mech Eng 3708 or Aero Eng 4253 or consent of instructor for majors that do not require either of these courses, or graduate standing.~~

Field Trip Statement

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

Justification for change:

Broadening the prerequisites to encourage enrollment from multiple disciplines, while still requiring appropriate background and maturity.

Semesters previously offered as an experimental course

Co-Listed Courses:

AERO ENG 5212 - Introduction to Finite Element Analysis

Course Reviewer Comments

Key: 1245

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/24/16 10:17 am

Viewing: **MET ENG 1210 : Chemistry Of Materials**

File: 1974.1

Last edit: 01/25/17 3:38 pm

Changes proposed by: smiller

Catalog Pages referencing this course

Freshman Engineering Program

Other Courses referencing this course

In The Prerequisites:

CER ENG 2240 : Applied Glass Forming
CER ENG 3220 : Phase Equilibria
CER ENG 3230 : Thermodynamics of Materials
CHEM 4810 : Chemistry And Inherent Properties Of Polymers
CHEM 5810 : Introduction to Polymeric Materials
CHEM 5850 : Introduction to Coating Chemistry
CHEM ENG 5320 : Introduction to Nanomaterials
MET ENG 3220 : Introduction To Extractive Metallurgy
MET ENG 3330 : Metallurgical Thermodynamics I
MS&E 4810 : Chemistry And Inherent Properties Of Polymers
MS&E 5810 : Introduction to Polymeric Materials
MS&E 5850 : Introduction to Coating Chemistry

In Workflow

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

Approval Path

1. 12/24/16 1:03 pm mjokeefe: Approved for RMATSENG Chair
2. 01/12/17 5:58 pm Kristy Giacomelli (kristyg): Approved for CCC Secretary

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	1210
Title	Chemistry Of Materials
Abbreviated Course Title	Chemistry Of Materials

Catalog Description

3. 01/25/17 3:38 pm sraper: Approved for Engineering DSCC Chair
4. 02/14/17 11:20 am Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 3:13 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 9:56 am Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Basic Inorganic Chemistry of Materials. Topics will include chemical properties, structure and bonding of solids, energy, enthalpy, entropy, thermochemistry, kinetics and rate processes. Application of chemistry principles to materials engineering through flowsheeting, reactor design, materials/metals processing and the environment.

Prerequisites

"C" or better grade in Chem 1310.

Field Trip Statement

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

Required for Majors	No
Elective for Majors	No

Justification for change:

The Met Eng and Cer Eng BS program curricula are being revised to include CHEM 1320 instead of Met 1210, thus course is no longer needed.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

sraper (01/25/17 3:38 pm): approve deactivation, but understand DC will have to be changed.

Key: 1974

Course Inventory Change Request

Date Submitted: 05/08/17 4:29 pm

Viewing: **MIN ENG 1912 : Principles Of Mining Engineering**

File: 874.1

Last edit: 05/11/17 1:16 pm

Changes proposed by: lahne

Catalog Pages referencing this course

Freshman Engineering Program

Programs referencing this course

MI ENG-BS: Mining Engineering BS

Other Courses referencing this course

In The Prerequisites:

MIN ENG 2126 : Introduction To Mining Safety

MIN ENG 2914 : Surface Mine Design

MIN ENG 2924 : Underground Mine Design

MIN ENG 2925 : Surveying For Mineral Engineers

MIN ENG 3912 : Materials Handling In Mines

Requested Effective Change Date: Fall **2017** ~~2014~~

In Workflow

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

Approval Path

1. 05/08/17 4:30 pm Braden lusk (blusk): Approved for RMINNUCL Chair
2. 05/08/17 4:31 pm Lahne Black (lahne): Approved for CCC Secretary

Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	1912
Title	Principles Of Mining Engineering
Abbreviated Course Title	Principles Of Min Engr
Catalog Description	

3. 05/08/17 4:51 pm sraper: Approved for Engineering DSCC Chair
4. 05/08/17 5:00 pm Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 2:32 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 1:16 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Principles and definitions related to mining engineering including one or more field trips to familiarize the student with current mining practices.

Prerequisites

Field Trip Statement

Credit Hours	LEC: **2** ~~1~~	LAB: 0	IND: 0	RSD: 0
Total: **2** ~~1~~				
Required for Majors	**Yes** ~~No~~			
Elective for Majors	No			

Justification for change:

Due to a degree change. This course will not be offered during Fall 2017 so it will affect the DC but will not affect any students until Spring 2018 at the earliest.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 874

Course Inventory Change Request

Date Submitted: 03/10/17 10:23 am

Viewing: **MIN ENG 2126 : Introduction To Mining Safety**

File: 2520.1

Last edit: 04/10/17 3:00 pm

Changes proposed by: cifarellit

Catalog Pages referencing this course

Freshman Engineering Program

Programs referencing this course

MI ENG-BS: Mining Engineering BS

Other Courses referencing this course

In The Prerequisites:

EXP ENG 5612 : Principles Of Explosives Engineering

MIN ENG 3002 : Mine Rescue

MIN ENG 4122 : Advanced Mine Health and Safety

MIN ENG 5612 : Principles of Explosives Engineering

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Mining & Nuclear Engineering

In Workflow

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

Approval Path

1. 03/13/17 10:42 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:25 pm
   Kristy Giacomelli (kristyg):

Discipline	Mining Engineering (MIN ENG)
Course Number	2126
Title	Introduction To Mining Safety
Abbreviated Course Title	Intro To Mining Safety
Catalog Description	

Approved for CCC Secretary

3. 04/10/17 3:00 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:02 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:03 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:47 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Safety ~~Instruction in the safety~~ aspects of mining **in** accordance with the MSHA Training Program required for all new miners. Subjects include self-rescue and respiratory protection, ground control, hazard recognition, mine gases, and legal aspects associated with mining.

Prerequisites

~~Accompanied or preceded by Min Eng 1912.~~

Field Trip Statement

Credit Hours	LEC: 0	LAB: 1	IND: 0	RSD: 0

Total: 1

Required for Majors	**Yes** ~~No~~
Elective for Majors	No

Justification for change:

Change in material and content of the course to align more with the course description. pre-requisite was not needed.

Semesters previously offered as an experimental course

Slightly modified course description and checked required for majors.

Co-Listed Courses:

Course Reviewer Comments

Key: 2520

Course Inventory Change Request

Date Submitted: 03/10/17 10:26 am

Viewing: MIN ENG 2412 ~~3412~~ : Principles Of Mineral Processing

File: 2268.1

Last edit: 04/10/17 3:03 pm

Changes proposed by: cifarellit

Programs referencing this course

MI ENG-BS: Mining Engineering BS

MT ENG-BS: Metallurgical Engineering BS

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	**2412** ~~3412~~
Title	Principles Of Mineral Processing
Abbreviated Course Title	Prin Of Mineral Proc

Catalog Description

In Workflow

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

Approval Path

1. 03/13/17 10:42 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:25 pm
   Kristy Giacomelli (kristyg):

Approved for CCC Secretary

3. 04/10/17 3:03 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:22 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:04 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:47 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Introduction to the principles of mineral processing including mineral resources; particle comminution, classification, separation and dewatering; flowsheet and equipment design.

Prerequisites

Field Trip Statement

Credit Hours LEC: 2 LAB: 1 IND: 0 RSD: 0 Total: 3

Required for Majors	**Yes** ~~No~~
Elective for Majors	No

Justification for change:

Introduce an essential mining engineering course in the sophomore year so students can build on the knowledge later. Change in material and content of the course to align more with the course description and curriculum needs.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

sraper (04/10/17 3:03 pm): Checked required for majors box.

Key: 2268

Course Inventory Change Request

Date Submitted: 03/10/17 10:29 am

Viewing: **MIN ENG 2925 : Surveying For Mineral Engineers**

File: 1534.1

Last edit: 05/11/17 12:47 pm

Changes proposed by: cifarellit

Programs referencing this course

MI ENG-BS: Mining Engineering BS

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	2925
Title	Surveying For Mineral Engineers
Abbreviated Course Title	Survey For Mineral Engrs

Catalog Description

In Workflow

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

Approval Path

1. 03/13/17 10:42 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:25 pm
   Kristy Giacomelli (kristyg):

Approved for CCC Secretary

3. 04/18/17 8:44 am sraper: Approved for Engineering DSCC Chair
4. 04/20/17 4:12 pm Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 2:05 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:48 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Principles of surface and underground survey practice utilizing total station, engineer's level and GPS. Traversing and details, note taking and computations, balancing surveys and error analysis, staking-out new points, and map construction with AutoCAD.

Prerequisites

Preceded ~~Math 1160, accompanied~~ or **accompanied** ~~preceded~~ by Min Eng 1912.

Field Trip Statement

Credit Hours LEC: 0 LAB: 2 IND: 0 RSD: 0 Total: 2

Required for Majors	No
Elective for Majors	No

Justification for change:

Change in material and content of the course to align more with the course description, pre-req not needed

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1534

Course Inventory Change Request

Date Submitted: 03/02/17 11:22 am

Viewing: **MIN ENG 3913 : Mineral Identification and Exploration ~~Mining Exploration~~**

File: 41.3

Last approved: 04/25/14 3:06 pm

Last edit: 05/10/17 2:07 pm

Changes proposed by: cifarellit

Programs referencing this course

- GE ENG-BS: Geological Engineering BS
- GEOL-MI: Geology Minor
- MI ENG-BS: Mining Engineering BS
- MI ENG-MI: Mining Engineering Minor

Other Courses referencing this course

In The Prerequisites:

- MIN ENG 4932 : Underground Mining Methods And Equipment

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	3913

In Workflow

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

Approval Path

1. 03/13/17 10:40 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:25 pm
   Kristy Giacomelli (kristyg):

Title

Mineral Identification and Exploration ~~Mining Exploration~~

Abbreviated Course Title **Mineral ID & Exploration** ~~Mining Exploration~~

Catalog Description

Characterization ~~Classification~~ of mineral deposits. Ore body definition. **Mineral Exploration techniques.** ~~Geology, geophysics, geochemistry, geobotany, and drilling in mineral exploration.~~**Sample** ~~Sampling~~ methods, errors and mitigation. **Rock Identification.** ~~Resources/Reserves classification.Proven, probable and possible resources/reserves.Reserve estimation project.~~

Prerequisites

Approved for CCC Secretary

3. 04/10/17 3:16 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:22 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:07 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:48 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

History

1. Apr 25, 2014 by lahne (41.1)

Either both Chem 1310 and Chem 1319 or Chem 1351; either Geo Eng 1150 or Geology 1110. ~~Geology 2611.~~

Field Trip Statement

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

Justification for change:

Change in title, material and content of the course to align more with the course description.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

sraper (04/10/17 3:16 pm): Modified prereqs to remove ambiguity. Some DSCC committee members indicate semi colons would be better. Please look at this at CCC meeting.

Key: 41

Course Inventory Change Request

Date Submitted: 03/02/17 11:03 am

Viewing: **MIN ENG 4096 : Computer Aided Mine Design ~~Project I~~**

File: 1944.6

Last approved: 02/09/15 3:18 am

Last edit: 05/10/17 2:08 pm

Changes proposed by: cifarellit

Programs referencing this course

MI ENG-BS: Mining Engineering BS

Other Courses referencing this course

In The Prerequisites:

MIN ENG 4097 : Capstone Design Project

Requested Effective Change Date	Fall **2017** ~~2015~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	4096
Title	**Computer Aided** Mine Design ~~Project I~~

In Workflow

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

Approval Path

1. 03/13/17 10:38 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:25 pm
   Kristy Giacomelli (kristyg):

Abbreviated Course Title	**Comp Aid** Mine Design ~~Project I~~
Catalog Description	

Approved for CCC Secretary

3. 04/10/17 3:34 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:44 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:08 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:49 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

History

1. May 2, 2014 by lahne (1944.1)
2. Feb 9, 2015 by cifarellit (1944.3)

Mine planning and design using commercial software. Orebody description. Surface mining: geometric design, pit limits, and production planning. Underground mining: development planning, opening and support design, ventilation and production

planning. Group projects with real-world mining data. Preparation for capstone design project.

Prerequisites

Min Eng 4522, Min Eng **4932,** ~~4932~~ and Min Eng 4933.

Field Trip Statement

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

Justification for change:

Change in title, material, and content of the course to align more with the course description.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1944

Course Inventory Change Request

Date Submitted: 03/02/17 11:16 am

Viewing: **MIN ENG 4097 : Capstone ~~Mine~~ Design Project ~~II~~**

File: 1128.7

Last approved: 02/09/15 3:19 am

Last edit: 05/10/17 2:09 pm

Changes proposed by: cifarellit

Programs referencing this course

MI ENG-BS: Mining Engineering BS

Requested Effective Change Date	Fall **2017** ~~2015~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	4097
Title	**Capstone** ~~Mine~~ Design Project ~~II~~
Abbreviated Course Title	**Capstone** ~~Mine~~ Design Project ~~II~~

Catalog Description

In Workflow

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

Approval Path

1. 03/13/17 10:39 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:26 pm
   Kristy Giacomelli (kristyg):

Approved for CCC Secretary

3. 04/10/17 3:35 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:44 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:09 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:51 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

History

1. Apr 25, 2014 by lahne (1128.1)
2. Feb 9, 2015 by cifarellit (1128.3)

Capstone project with written and oral presentations. Includes mine design and optimization, production plan, equipment and flowsheet design based on geology, resources/reserves, geotechnics, hydrology and hydro-geology. Project also

incorporates markets, environmental and permitting, mine-mill organization, support facilities, economic and risk analyses.

Prerequisites

Min Eng 4096. ~~Min Eng 4096 and completion of 110 hours in the Mining Engineering Curriculum.~~

Field Trip Statement

Credit Hours Total: 4	LEC: 1	LAB: 3	IND: 0	RSD: 0
Required for Majors	Yes			
Elective for Majors	No			

Justification for change:

Change in title, material, and content of the course to align more with the course description.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1128

Course Inventory Change Request

Date Submitted: 03/02/17 11:28 am

Viewing: **MIN ENG 4113 : Mine Atmosphere Control**

File: 2260.5

Last approved: 02/09/15 3:18 am

Last edit: 05/10/17 2:10 pm

Changes proposed by: cifarellit

Programs referencing this course

MI ENG-BS: Mining Engineering BS

Other Courses referencing this course

In The Prerequisites:

MIN ENG 6133 : Mine Atmospheric Control II

Requested Effective Change Date	**Spring 2018** ~~Fall 2015~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	4113
Title	Mine Atmosphere Control

In Workflow

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

Approval Path

1. 03/13/17 10:41 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:26 pm
   Kristy Giacomelli (kristyg):

Abbreviated Course Title	Mine Atmosphere Control
Catalog Description	

Approved for CCC Secretary

3. 04/10/17 3:35 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:44 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:10 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:51 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

History

1. Feb 9, 2015 by cifarellit (2260.1)

Fundamentals of mine ventilation, including the principles of airflow, control of gases, dust, and temperature, methane drainage, mine fans, network theory, computer network simulation, and economics of airflow, with emphasis on analysis, systems design and practical application.

Prerequisites

Mech Eng 2527; ~~Chem 3410 and~~ Civ **Eng 3330 or Nuc Eng 3221.** ~~Eng 3330.~~

Field Trip Statement				
Credit Hours Total: 3	LEC: 2	LAB: 1	IND: 0	RSD: 0
Required for Majors	Yes			
Elective for Majors	No			

Justification for change:

Change in pre-reqs to align more with the course material and content.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 2260

Course Inventory Change Request

Date Submitted: 03/21/17 2:57 pm

Viewing: **MIN ENG 4512 : Mine Management**

File: 1302.5

Last approved: 05/06/16 3:33 am

Last edit: 05/10/17 2:13 pm

Changes proposed by: cifarellit

Programs referencing this course

MI ENG-BS: Mining Engineering BS

Other Courses referencing this course

In The Catalog Description:

ECON 4512 : Mine Management

Requested Effective Change Date	Fall **2017** ~~2015~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	4512
Title	Mine Management
Abbreviated Course Title	Mine Management

In Workflow

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

Approval Path

1. 03/21/17 3:00 pm
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/24/17 12:00 pm
   Kristy Giacomelli (kristyg):

Approved for CCC Secretary

3. 04/10/17 3:37 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:44 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:13 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:52 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Catalog Description

History

1. May 6, 2016 by cifarellit (1302.1)

Theory and practice of mine management, including basic managerial functions, management theories, communication skills, motivation, leadership, organization, maintenance management, managerial decision making, cost control, labor relations, government relations, ethics and risks management with emphasis in presentation skills.

Prerequisites

Completion of **50** ~~100~~ credits **toward** ~~in~~ Mining Engineering **degree.** ~~curriculum.~~

Field Trip Statement

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

Justification for change:

moved course to Junior year 100 credits is too high of a requirement. reduce ch requirement to enable students to enroll at the proper time. The course does require a basic knowledge of mining and mining technology, but does not require specific courses as prerequisites.

Semesters previously offered as an experimental course

Co-Listed Courses:

ECON 4512 - Mine Management

Course Reviewer Comments

sraper (04/10/17 3:37 pm): Changed effective date and reworded prereq.

Key: 1302

Course Inventory Change Request

Date Submitted: 03/10/17 11:04 am

Viewing: **MIN ENG 4522 : Ore Reserve Analysis And Geostatistics**

File: 1726.1

Last edit: 05/10/17 2:18 pm

Changes proposed by: cifarellit

Programs referencing this course

GEOL-MI: Geology Minor

MI ENG-BS: Mining Engineering BS

Other Courses referencing this course

In The Prerequisites:

MIN ENG 4096 : Computer Aided Mine Design

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	4522
Title	Ore Reserve Analysis And Geostatistics

In Workflow

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

Approval Path

1. 03/13/17 10:47 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:26 pm
   Kristy Giacomelli (kristyg):

Abbreviated Course Title	Ore Resrve Anlys&Geostat
Catalog Description	

Approved for CCC Secretary

3. 04/10/17 3:38 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:44 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:19 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:52 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

An introduction to principles of geostatistics, theory of spatially correlated random variables, variance and co-variances and their application on the evaluation of mineral resources, ore reserve estimation, strategic exploration, and production planning. Real case studies from mining industry will be presented.

Prerequisites

~~Math 3304,~~ Stat **3113 or Stat 3115.** ~~3113.~~

Field Trip Statement

Credit Hours	LEC: 2	LAB: 1	IND: 0	RSD: 0

Total: 3

Required for Majors	**Yes** ~~No~~
Elective for Majors	No

Justification for change:

Change in pre-reqs of the course to align more with the course description

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

sraper (04/10/17 3:38 pm): Changed to required for majors.

Key: 1726

Course Inventory Change Request

Date Submitted: 03/02/17 11:32 am

Viewing: **MIN ENG 4912 : Mine Power And Drainage**

File: 1145.4

Last approved: 02/09/15 3:18 am

Last edit: 05/11/17 12:53 pm

Changes proposed by: cifarellit

Programs referencing this course

MI ENG-BS: Mining Engineering BS

Other Courses referencing this course

In The Prerequisites:

MIN ENG 4322 : Coal Mine Development And Production

Requested Effective Change Date	**Spring 2018** ~~Fall 2015~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	4912
Title	Mine Power And Drainage

In Workflow

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

Approval Path

1. 03/13/17 10:48 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:26 pm
   Kristy Giacomelli (kristyg):

Abbreviated Course Title	Mine Power And Drainage
Catalog Description	

Approved for CCC Secretary

3. 04/10/17 3:38 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:44 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:23 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:53 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

History

1. Feb 9, 2015 by cifarellit (1145.1)

Engineering principles of mine power distribution and application and mine dewatering. Basics of electrical circuits, AC/DC power, transformers, electric meters, power distribution, power management. Hydraulic power systems. Compressed air in mines. Mine dewatering. Controlling water inflow. Dewatering wells. Water pumping and pumping systems.

Prerequisites

Mech Eng 2527; ~~Chem 3410 and~~ Civ **Eng 3330 or Nuc Eng 3221.** ~~Eng 3330.~~

Field Trip Statement

Field trip required.

Credit Hours	LEC: 2	LAB: 1	IND: 0	RSD: 0

Total: 3

Required for Majors	Yes
Elective for Majors	No

Justification for change:

Change in pre-reqs of the course to align more with the course content....

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1145

Course Inventory Change Request

Date Submitted: 03/10/17 10:50 am

Viewing: **MIN ENG 4932 : Underground Mining Methods And Equipment**

File: 1524.1

Last edit: 04/10/17 3:39 pm

Changes proposed by: cifarellit

Programs referencing this course

- MI ENG-BS: Mining Engineering BS
- MI ENG-MI: Mining Engineering Minor

Other Courses referencing this course

In The Prerequisites:

- MIN ENG 4096 : Computer Aided Mine Design
- MIN ENG 4922 : Tunneling & Underground Construction Techniques
- MIN ENG 6932 : Advanced Mining Systems
- MIN ENG 6935 : Underground Mine Design

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	4932

In Workflow

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

Approval Path

1. 03/13/17 11:00 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:26 pm
   Kristy Giacomelli (kristyg):

Title

Underground Mining Methods And Equipment

Abbreviated Course Title Ungrnd Min Meth & Equip

Catalog Description

Approved for CCC Secretary

3. 04/10/17 3:39 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:44 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:23 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:54 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Principles of planning, constructing, and operating economically viable underground mines. Cost effective mining methods: room-and-pillar, sublevel open stoping, VCR, shrinkage, sublevel caving, cut-and-fill, block caving, longwall. Selection of equipment for underground mining operations. Optimization of mine performance.

Prerequisites

Preceded or accompanied by Min Eng **3913.** ~~2924, Min Eng 3512; coreq. Min Eng 3913; Min Eng 4823.~~

Field Trip Statement

Field Trip Required.

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

Justification for change:

Change in material and content of the course to align more with the course description, pre-reqs removed and one co-req removed to align more with teaching material.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

sraper (04/10/17 3:39 pm): Changed to required for major and modified prereq statement.

Key: 1524

Course Inventory Change Request

Date Submitted: 03/10/17 11:06 am

Viewing: **MIN ENG 4933 : Surface Mining Methods And Equipment**

File: 682.1

Last edit: 05/10/17 2:24 pm

Changes proposed by: cifarellit

Programs referencing this course

- MI ENG-BS: Mining Engineering BS
- MI ENG-MI: Mining Engineering Minor

Other Courses referencing this course

In The Prerequisites:

- GEO ENG 4276 : Environmental Aspects Of Mining
- MIN ENG 4096 : Computer Aided Mine Design
- MIN ENG 4742 : Environmental Aspects Of Mining
- MIN ENG 5933 : Advanced Surface Mining Methods
- MIN ENG 6932 : Advanced Mining Systems
- MIN ENG 6936 : Surface Mine Design

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)

In Workflow

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

Approval Path

1. 03/13/17 10:48 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:26 pm
   Kristy Giacomelli (kristyg):

Course Number 4933

Title

Surface Mining Methods And Equipment

Abbreviated Course Title **Surface** ~~Surfce~~ Min **Mth** ~~Meth~~ & Equip

Catalog Description

Approved for CCC Secretary

3. 04/10/17 3:41 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:44 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:24 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:54 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Principles of planning, constructing, and operating economically viable surface mines. Cost effective mining methods: placer mining, strip mining, open pit mining, quarrying. Selection of equipment for surface mining operations. Optimization of mine performance.

Prerequisites

Min Eng 3912; Min Eng ~~2914; Min Eng~~ 3512; **preceded or accompanied by Min Eng 4823.** ~~coreq. Min Eng 4823.~~

Field Trip Statement

Field trip required.

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

Justification for change:

Change in pre-reqs of the course to align more with the course description

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

sraper (04/10/17 3:41 pm): Changed to required for majors and modified prereq statement.

Key: 682

Course Inventory Change Request

Date Submitted: 03/10/17 11:09 am

Viewing: **MIN ENG 5612 : Principles of ~~Of~~ Explosives Engineering**

File: 408.1

Last edit: 05/10/17 2:25 pm

Changes proposed by: cifarellit

Catalog Pages referencing this course

Explosives Engineering

Programs referencing this course

EXP EN-MI: Explosives Engineering Minor
EXP EN-MS: Explosives Engineering MS
GE ENG-BS: Geological Engineering BS
MI ENG-BS: Mining Engineering BS

Other Courses referencing this course

In The Catalog Description:

EXP ENG 5612 : Principles Of Explosives Engineering

In The Prerequisites:

EXP ENG 5622 : Blasting Design And Technology
EXP ENG 6412 : Environmental Controls For Blasting
MIN ENG 5622 : Blasting Design And Technology
MIN ENG 6622 : Environmental Controls For Blasting

In Workflow

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

Approval Path

1. 03/13/17 10:49 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:26 pm
   Kristy Giacomelli (kristyg):

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	5612
Title	Principles **of** ~~Of~~ Explosives Engineering
Abbreviated Course Title	Prin Of Explosives Engr
Catalog Description	

Approved for CCC Secretary
3. 04/10/17 3:42 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:44 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:25 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:55 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Theory and application of explosives in the mining industry; explosives, initiating systems, characteristics of explosive reactions and rock breakage, fundamentals of blast design, drilling and blasting, regulatory and safety considerations.

Prerequisites

Min Eng 2126; **successful** ~~accompanied or preceded by Civ Eng 2715 or Geology 3310 or Geology 2611; Successful~~ background check.

Field Trip Statement

Credit Hours	LEC: 2	LAB: 1	IND: 0	RSD: 0

Total: 3

Required for Majors	**Yes** ~~No~~
Elective for Majors	No

Justification for change:

Change in pre-reqs and co-reqs of the course to align more with the course description

Semesters previously offered as an experimental course

Co-Listed Courses:

EXP ENG 5612 - Principles Of Explosives Engineering

Course Reviewer Comments

sraper (04/10/17 3:42 pm): Changed "Of" to "of" in course title and selected required for majors box.

Key: 408

Course Inventory Change Request

Date Submitted: 03/02/17 11:10 am

Viewing: **MIN ENG 5913 : Advanced Computer Aided Mine Design**

File: 300.1

Last edit: 05/10/17 2:26 pm

Changes proposed by: cifarellit

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	5913
Title	**Advanced** Computer Aided Mine Design
Abbreviated Course Title	**Adv Cmp Aid** ~~Computer Aided~~ Mine Design

Catalog Description

In Workflow

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

Approval Path

1. 03/13/17 10:38 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/15/17 3:26 pm
   Kristy Giacomelli (kristyg):

Approved for CCC Secretary

3. 04/10/17 3:43 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:46 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:26 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:55 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

Project-based mine planning and design course. Engineering design process applied to computer-aided mine planning and design. Mine layouts, production planning, and materials scheduling optimization.

Prerequisites

Graduate standing. ~~Min Eng 2914 or graduate standing.~~

Field Trip Statement

Credit Hours	LEC: 2	LAB: 1	IND: 0	RSD: 0
Total: 3				

Required for Majors	No
Elective for Majors	No

Justification for change:

Change in title, material, and content of the course to align more with the course description.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

sraper (04/10/17 3:43 pm): Leaving this unchanged but will share DSCC comments for further discussion.

Key: 300

Course Inventory Change Request

Date Submitted: 02/22/17 12:55 pm

Viewing: NUC ENG 4259 : Licensing Of Nuclear Power Plants

File: 134.1

Last edit: 05/10/17 2:26 pm

Changes proposed by: usmans

Requested Effective Change Date	Fall **2017** ~~2014~~
Department	Mining & Nuclear Engineering
Discipline	Nuclear Engineering (NUC ENG)
Course Number	4259
Title	Licensing Of Nuclear Power Plants
Abbreviated Course Title	Licensing Nuc Pwr Plants
Catalog Description	

In Workflow

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

Approval Path

1. 02/27/17 1:08 pm Braden lusk (blusk): Approved for RMINNUCL Chair
2. 02/27/17 1:09 pm Kristy Giacomelli (kristyg): Approved for CCC Secretary

3. 03/14/17 3:01 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 2:22 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:27 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:56 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

The pertinent sections of the Code of Federal Regulations, the Nuclear Regulatory Commission's Regulatory Guides and Staff Position Papers, and other regulatory requirements are reviewed. Safety analysis reports and environmental reports for specific plants are studied. **Operational aspects of the nuclear power plant will be covered by including field trips.**

Prerequisites

Nuc Eng 3205.

Field Trip Statement

Credit Hours LEC: 2 LAB: **1** ~~0~~ IND: 0 RSD: 0 Total: 2

Required for Majors	No
Elective for Majors	**Yes** ~~No~~

Justification for change:

During several development board meetings, the need for a course on operational aspects and licensing was identified by the board members. To address this need, this course is developed/modified as an inter-campus shared course. The lecture portion of the course has been in the catalog for many years. The request is to add a lab section for the class which will include experiential learning through field trips to nuclear power plants.

Semesters previously offered as an experimental course

Not known - not since the proposer arrived on campus in 2004.

Co-Listed Courses:

Course Reviewer Comments

sraper (03/14/17 3:01 pm): I have asked Nuc Eng to provided field trip information for the CCC meeting.

Key: 134

Course Inventory Change Request

Date Submitted: 03/02/17 9:51 am

Viewing: **NUC ENG 4496 : Nuclear System Design I**

File: 2371.1

Last edit: 05/11/17 12:57 pm

Changes proposed by: castanoc

Programs referencing this course

NU ENG-BS: Nuclear Engineering BS

Other Courses referencing this course

In The Prerequisites:

NUC ENG 4497 : Nuclear System Design II

Requested Effective Change Date	**Spring 2018** ~~Fall 2014~~
Department	Mining & Nuclear Engineering
Discipline	Nuclear Engineering (NUC ENG)
Course Number	4496
Title	Nuclear System Design I
Abbreviated Course Title	Nuclear System Design I

In Workflow

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

Approval Path

1. 03/08/17 10:12 am
   Braden lusk (blusk): Approved for RMINNUCL Chair
2. 03/08/17 11:12 am
   Kristy Giacomelli (kristyg):

Catalog Description

Approved for CCC Secretary

3. 04/10/17 3:45 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 3:46 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:28 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:57 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

A preliminary design of a nuclear system (e.g. a fission or fusion nuclear reactor plant, a space power system, a radioactive waste disposal system).

Prerequisites

Nuc Eng 3223, **Nuc Eng** 4203, **and Nuc Eng 4229;** ~~4229,~~ preceded or accompanied by **Nuc Eng** ~~Nuc Eng~~ 4241.

Field Trip Statement

Credit Hours LEC: **0** ~~1~~ LAB: **1** ~~0~~ IND: 0 RSD: 0

Total: 1

Required for Majors	**Yes** ~~No~~
Elective for Majors	No

Justification for change:

To better educate our senior students in the knowledge of contemporary issues (ABET Student Outcome J), we will ask them to attend the departmental seminars. Therefore this change will allow us to have 2 contact hours per week, one will be the seminar, the second is the traditional senior design preparation meeting. The seminars usually bring information useful to our students in the preparation of their senior design and useful once they graduate to know new trends in engineering and research. This change also aligns the class closer to its intended purpose, this is a class has always been run as an open lab where students select and do a preliminary design of a nuclear system.

Semesters previously offered as an experimental course

In the Spring 2017, we asked all our seniors to attend the seminar every monday. Students appreciated the experience. Unfortunately, some students were not available at the time. Making this change will allow us to have the seminar hour as one of the contact hours for this course and guarantee availability of all seniors.

Co-Listed Courses:

Course Reviewer Comments

Key: 2371

Course Inventory Change Request

New Course Proposal

Date Submitted: 04/06/17 11:22 am

Viewing: **PET ENG 2002 : Cooperative Work Training**

File: 4421

Last edit: 05/11/17 12:59 pm

Changes proposed by: reflori

Requested Effective Change Date	Fall 2017
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Petroleum Engineering (PET ENG)
Course Number	2002
Title	Cooperative Work Training
Abbreviated Course Title	Coop Work Training

Catalog Description

In Workflow

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

Approval Path

1. 04/07/17 6:01 pm Francisca Oboh-Ikuenobe (ikuenobe): Approved for RGEOSENG Chair
2. 04/08/17 4:05 pm Kristy Giacomelli (kristyg):

Approved for CCC Secretary

3. 04/18/17 8:26 am sraper: Approved for Engineering DSCC Chair
4. 04/20/17 4:12 pm Lahne Black (lahne): Approved for Pending CCC Agenda post
5. 05/10/17 2:29 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 12:59 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

On-the-job experience gained through cooperative education with industry, with credit arranged through departmental cooperative advisor. Grade received depends on quality of reports submitted and work supervisor's evaluation.

Prerequisites

Field Trip Statement

Credit Hours LEC: 0 LAB: 0 IND: 1-3 RSD: 0 Total: 1-3

Required for Majors	No
Elective for Majors	Yes

Justification for new course:

Co-list with GE 2002 and give students an opportunity to gain credit through internship project work.

Semesters previously offered as an experimental course

None, but this is a proposed co-listing to an existing course, GE 2002.

Co-Listed Courses:

Course Reviewer Comments

imorgan (05/11/17 12:59 pm): Removing the co-list simplified the approval path. The co-list can be considered later, but CCC doesn't see the need for that.

Key: 4421

Course Inventory Change Request

Date Submitted: 02/17/17 3:27 pm

Viewing: **SYS ENG 6103 : Systems Life Cycle Costing ~~Economic Analysis for Systems Engineering~~**

File: 1367.4

Last approved: 05/06/16 3:33 am

Last edit: 05/11/17 1:01 pm

Changes proposed by: dagli

Catalog Pages referencing this course

- Engineering Management
- Systems Engineering

Programs referencing this course

- SYS EN-PHD: Systems Engineering PhD
- SYS ENG-MS: Systems Engineering MS

Requested Effective Change Date	**Fall 2017** ~~Spring 2016~~
Department	Engineering Management and Systems Engineering
Discipline	Systems Engineering (SYS ENG)
Course Number	6103
Title	

In Workflow

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

Approval Path

1. 02/17/17 3:28 pm Suzanna Long (longsuz): Approved for RENGMNGT Chair
2. 02/21/17 3:12 pm Kristy Giacomelli (kristyg):

Systems Life Cycle Costing ~~Economic Analysis for Systems Engineering~~

Abbreviated Course Title	**Sys Life Cycle Costing** ~~Economic Analysis Sys Eng~~

Catalog Description

Approved for CCC Secretary

3. 03/14/17 2:55 pm sraper: Approved for Engineering DSCC Chair
4. 04/10/17 2:22 pm Kristy Giacomelli (kristyg): Approved for Pending CCC Agenda post
5. 05/10/17 2:31 pm Lahne Black (lahne): Approved for CCC Meeting Agenda
6. 05/11/17 1:01 pm Ilene Morgan (imorgan): Approved for Campus Curricula Committee Chair

History

1. May 6, 2016 by dagli (1367.1)

Methods of economic evaluation for engineering projects involving complex systems. Economic impacts on choosing system alternatives, life cycle costing, economic decisions involving risk and uncertainty, and engineering cost estimation for projects in government, defense, and commercial industries.

Prerequisites

Graduate Standing.

Field Trip Statement

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

Justification for change:

The new name reflects what is currently being covered in the course

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

sraper (02/24/17 9:09 am): Changed effective date.

imorgan (05/11/17 1:01 pm): Effective date had to be changed from SS 2017 to FS 2017 because the change did not make the April CCC meeting.

Key: 1367