Campus Curricula Committee Meeting Agenda
May 6, 2020
8:15am - 9:45am, Zoom
(For Faculty Senate Meeting of June 11, 2020)

Review of submitted Course Change forms:

File 1116.1	CHEM ENG 5000: Special Problems
File 4700	CIV ENG 5209: Wind Engineering
File 4699	CIV ENG 6141: Principles of Rheology
File 468.8	COMP SCI 1570: Introduction to C++ Programming
File 673.1	ENGLISH 3560: Technical Writing
File 4552	GEO ENG 5810: Fundamentals of Space Resources
File 745.2	GEOPHYS 3210: Introduction to Geophysics
File 259.13	IS&T 3423: Database Management
File 935.8	IS&T 4261: Information Systems Project Management
File 2339.1	IS&T 5423: Foundations of Data Management
File 2254.6	IS&T 6261: Advanced Information Systems Project Management
File 4695	MUSIC 1144: Jazz Choir
File 4697	MUSIC 1151: Music of Latin America
File 4698	MUSIC 2163: Introduction to Composition and Arranging
File 4706	MUSIC 3253: History of Music in Film
File 1224.1	PHILOS 1105: Self and World: Introduction To Philosophy
File 2226.1	PHILOS 1115: Logic and Reasoning: An Introduction
File 4195.5	PHILOS 1130: How Should I Live? An Introduction to Ethics
File 2227.1	PHILOS 1175: Religion and the Idea of God: Diverse Perspectives
File 4246.2	PHILOS 3204: Wisdom and Virtue: An Introduction to Ancient Philosophy
File 1754.10	PHILOS 3205: Science, Souls and Skepticism: Early Modern Philosophy
File 4196.4	PHILOS 3302: Philosophy in the Middle Ages
File 4023.8	PHILOS 4325: Who Knows What? Knowledge, Truth and Justification
File 2510.7	PHILOS 4340: From Activism to Zoos: Issues in Social Ethics
File 1826.7	PHILOS 4360: Who Should Rule and Why? Debates in Political Philosophy
File 1567.1	PSYCH 5600: Advanced Social Psychology
File 4359.7	PSYCH 6602: Employee Affect and Behavior
File 2573.7	PSYCH 6610: Leadership, Motivation, and Culture
File 702.1	TCH COM 5540: Advanced Layout and Design
File 4701	THEATRE 1150: Theatre for Social Change

Review of submitted Degree Change forms:

File: 292.2	AI-CT : AI, Mach Lrn & Auto for Bus CT
File 142.45	AP MATH-BS: Applied Mathematics BS
File 7.14	AP MATH-MS: Applied Mathematics MS

File 254.8	AUTOEN-CTU: Undergraduate Certificate in Automation Engineering
File 230.16	AUTOEN-MI: Minor in Automation Engineering
File 146.25	BIO SC-BA: Biological Sciences BA
File 14.13	CH ENG-MS: Chemical Engineering MS
File 23.5	COGNEUR-MI: Cognitive Neuroscience Minor
File 156.33	GE ENG-BS: Geological Engineering BS
File 201.1	GE ENG-DE: Geological Engineering DE
File 61.4	GE ENG-MI: Geological Engineering Minor
File 165.27	GE ENG-MS: Geological Engineering Overview
File 268.7	GE ENG-MS: Geological Engineering MS
File 68.7	GEOT-ME: Geotechnics ME
File 64.47	GL&GPH-BS: Geology and Geophysics BS
File 166.19	GL&GPH-MS: Geology and Geophysics MS
File 72.5	I/O PSY-MI: Idus/Organization Psych Minor
File 234.25	INORGPS-MS: Industrial Organization Psychology MS
File 74.10	IST-MI: Information Sci & Tech Minor
File 84.8	MATH-MST: Mathematics MST
File 291.2	MGTLEAD-CT: Management and Leadership
File 98.6	MI ENG-MI: Mining Engineering Minor
File 94.2	MNRL PR-MI: Mineral Process Eng Minor
File 190.1	MUSIC-MI: Music Minor
File 108.42	PE ENG-BS: Petroleum Engineering BS
File 171.2	PE ENG-MS: Petroleum Engineering MS
File 358	PROPOSED: Advanced Engineering Materials Certificate
File 351	PROPOSED: Geoanalytics and Geointelligence Certificate
File 346	PROPOSED: Geoenvironmental Science and Engineering CT
File 350	PROPOSED: Geologic Hazards Certificate
File 355	PROPOSED: Geological Engineering PhD
File 356	PROPOSED: Iron and Steel Metallurgy Certificate
File 357	PROPOSED: Materials for Extreme Environments Certificate
File 353	PROPOSED: Space Resources Certifiicate
File 352	PROPOSED: Subsurface Water Resources
File 192.36	PSYCH-BA: Psychology BA
File 192.32	PSYCH-BS: Psychology BS
File 305.2	PSYMTRP-CT: Statistical Methods Psych CT
File 275.2	STRENG-CT: Contemporary Struct Engr CT
File 136.1	THEATRE-MI: Theatre Minor
File 304.10	WORKSPY-CT: Applied Workplace Psych CT

Review of submitted Experimental Course forms:

File 4702	ARCH ENG 5001.002: Renewable Systems in the Built Environment
File 4705	BIO SCI 2001.002: Epidemics in a Changing World

File 4696	COMP SCI 5001.002: Applied Social Network Analysis
File 4693	COMP SCI 6001.005: Internet of Things with Data Science
File 4694	GEO ENG 5001.005: Geomechanics for Geoprofessionals
File 4704	MATH 5001.004: Mathematics of Machine Learning
File 4703	MATH 6001.007: Introduction to Uncertainty Quantification

Review of submitted Name Change forms:

File 2	APPLIED AND ENVIRONMENTAL BIOLOGICAL SCIENCE

Course Change Request

Date Submitted: 01/29/20 11:45 am

Viewing: CHEM ENG 5000 : Special Problems

File: 1116.1

Last edit: 04/03/20 3:58 pm

Changes proposed by: luksc

Requested Effective Change Date	08/01/2014
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	5000
Title	Special Problems
Abbreviated Course Title	Special Problems

Catalog Description

Problems or readings on specific subjects or projects in the department. Consent of instructor required.

Prerequisites

Consent of Instructor Required

Field Trip Statement

Credit Hours	LEC: 0	LAB: 0	IND: 0	RSD: 0	Total: 0-6
Required for Majors	No				
Elective for Majors	No				

Justification for change:

This was an oversight when creating the new course numbering system. Some faculty have discovered this to use as a loophole on the limitation for technical electives

In Workflow

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

Approval Path

1. 02/01/20 11:40 am
   Joseph Smith (smithjose): Approved for RCHEMENG Chair
2. 02/10/20 9:14 am
   Kristy Giacomelli-Feys (kristyg): Rollback to RCHEMENG Chair for CCC Secretary
3. 03/29/20 7:28 pm
   Joseph Smith (smithjose): Approved for RCHEMENG Chair
4. 04/01/20 10:33 am

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (02/10/20 9:14 am): Rollback: Because Special Problems are variable and 5000 courses are also undergraduate available we do not use Graduate Standing for special problems. We use the consent of instructor required for that rule.

kristyg (04/01/20 10:33 am): Rollback: Uniformly this course is only listed as Consent of Instructor only. We do not allocate graduate or undergraduate on a 5000 level course since both can take this.

kristyg (04/03/20 3:58 pm): I updated the pre-reqs for this course to remove Graduate Students only. We need to keep the special problems uniformly across the board. I have rolled it back twice and emailed them to let them know this and they still submitted it.

Kristy Giacomelli-Feys (kristyg): Rollback to RCHEMENG Chair for CCC Secretary

5. 04/01/20 3:02 pm Joseph Smith (smithjose): Approved for RCHEMENG Chair
6. 04/03/20 3:58 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
7. 04/22/20 8:48 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

Key: 1116

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/02/20 4:30 pm

Viewing: **CIV ENG 5209 : Wind Engineering**

File: 4700

Last edit: 04/02/20 4:30 pm

Changes proposed by: seelyj

Requested Effective Change Date	Fall 2020
Department	Civil, Architectural, and Environmental Engineering
Discipline	Civil Engineering (CIV ENG)
Course Number	5209
Title	Wind Engineering
Abbreviated Course Title	Wind Engineering

Catalog Description

Introduction of wind engineering to advanced undergraduate and entry-level graduate students through structural engineering and atmospheric science fundamentals.

Prerequisites

A grade of "C" or better in Civ Eng 3201.

Field Trip Statement

Credit Hours	LEC: 3.0	LAB: 0	IND: 0	RSD: 0	Total: 3.0
Required for Majors	No				
Elective for Majors	Yes				

Justification for new course: new course number for experimental course

In Workflow

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

Approval Path

1. 04/02/20 4:31 pm Joel Burken (burken): Approved for RCIVILEN Chair
2. 04/03/20 3:17 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:48 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

Semesters previously offered as an experimental course	FS17, SP19
Co-Listed Courses:	ARCH ENG 5001 - Special Topics

Course Reviewer Comments

Key: 4700

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/02/20 4:21 pm

Viewing: **CIV ENG 6141 : Principles of Rheology**

File: 4699

Last edit: 04/02/20 4:21 pm

Changes proposed by: seelyj

Requested Effective Change Date	Fall 2020
Department	Civil, Architectural, and Environmental Engineering
Discipline	Civil Engineering (CIV ENG)
Course Number	6141
Title	Principles of Rheology
Abbreviated Course Title	Principles of Rheology

Catalog Description

The relation of the flow/deformation behavior of materials (liquids and flowing solids) and their internal structure is studied theoretically. The tools and most common procedures to measure the rheological properties of these materials are introduced and demonstrated. Different applications of rheology are presented and special problems discussed.

Prerequisites

CV 2210 and CV 3330, or equivalent with approval from the instructors.

Field Trip Statement

Credit Hours	LEC: 3.0	LAB: 0	IND: 0	RSD: 0	Total: 3.0
Required for Majors	No				
Elective for Majors	Yes				

Justification for new course:	new course number for experimental course

In Workflow

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

Approval Path

1. 04/02/20 4:31 pm Joel Burken (burken): Approved for RCIVILEN Chair
2. 04/03/20 3:17 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:48 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

Semesters previously offered as an experimental course	FS16, FS19
Co-Listed Courses:	

Course Reviewer Comments

Key: 4699

Preview Bridge

Course Change Request

Date Submitted: 03/25/20 4:47 pm

Viewing: COMP SCI 1570 : Introduction To C++ Programming

File: 468.8

Last approved: 08/05/19 6:01 am

Last edit: 03/25/20 4:47 pm

Changes proposed by: zhupe

Programs referencing this course	NU ENG-BS: Nuclear Engineering BS AE ENG-BS: Aerospace Engineering BS AP MATH-BS: Applied Mathematics BS BIOINFO-MI: Bioinformatics Minor BIO SC-BA: Biological Sciences BA CH ENG-BS: Chemical Engineering BS CP ENG-BS: Computer Engineering BS EL ENG-BS: Electrical Engineering BS PROPOSED: Computational Health Minor CMP SC-BS: Computer Science BS CMP SC-MI: Computer Science Minor ENG MG-BS: Engineering Management BS MC ENG-BS: Mechanical Engineering BS
Other Courses referencing this course	In The Prerequisites: AERO ENG 5139 : Computational Fluid Dynamics AERO ENG 5449 : Robotic Manipulators and Mechanisms AERO ENG 5830 : Applied Computational Methods BIO SCI 5323 : Bioinformatics CHEM ENG 3111 : Numerical Computing in Chemical and Biochemical Engineering COMP ENG 3150 : Introduction to Microcontrollers and Embedded System Design COMP ENG 3151 : Digital Engineering Lab II COMP SCI 1200 : Discrete Mathematics for Computer Science COMP SCI 1575 : Data Structures COMP SCI 1580 : Introduction To Programming Laboratory COMP SCI 2501 : Java and Object Oriented Design COMP SCI 5700 : Bioinformatics GEOPHYS 5251 : Introduction To Geophysical Data Analysis MECH ENG 2519 : Thermodynamics MECH ENG 3313 : Machine Dynamics MECH ENG 3411 : Modeling and Analysis of Dynamic Systems MECH ENG 3525 : Heat Transfer

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. CAT entry
11. Peoplesoft

Approval Path

1. 04/07/20 9:30 am Bruce McMillin (ff): Approved for RCOMPSCI Chair
2. 04/09/20 9:39 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:48 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Aug 5, 2019 by tauritzd (468.1)

MECH ENG 5139 : Computational Fluid Dynamics
MECH ENG 5449 : Robotic Manipulators and Mechanisms
MECH ENG 5763 : Computer Aided Design: Theory and Practice
MECH ENG 5830 : Applied Computational Methods

Requested Effective Change Date	**Fall** ~~Spring~~ 2020
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	1570
Title	Introduction To C++ Programming
Abbreviated Course Title	Intro To C++ Programming

Catalog Description	Object-Oriented Programming design and development in C++. Emphasis placed on good programming practices. Topics include syntax/semantics, operators, control flow/decision branching, **memory management,** functions, file I/O, C-strings, arrays, ~~memory management,~~ pointers, classes, ~~inheritance~~ templates, **inheritance,** polymorphism, and exception handling. This course is programming intensive.
Prerequisites	A grade of "C" or better in Comp Sci 1500 **or in both of Comp Sci 1971** and **Comp Sci 1981, and** accompanied by **Comp Sci** ~~Comp Sci~~ 1580.
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:	Address concerns regarding the transfer of C++ like courses into our university. The department's undergraduate committee agree unanimously that the solution to the transfer of C++ like courses should really come in as Comp Sci 1971 and Comp Sci 1981. Making either Comp Sci 1500 or Comp SCi 1971/81 prerequisite to get into Comp Sci 1570/80 solves all sorts of problems.
Semesters previously offered as an experimental course	

Co-Listed Courses:

Course Reviewer Comments

Key: 468

Preview Bridge

Course Change Request

Date Submitted: 01/25/20 1:19 pm

Viewing: ENGLISH 3560 : Technical Writing

File: 673.1

Last edit: 03/25/20 12:56 pm

Changes proposed by: kswenson

Catalog Pages referencing this course	Degree Programs
Programs referencing this course	NU ENG-BS: Nuclear Engineering BS PE ENG-BS: Petroleum Engineering BS PHYSIC-BS: Physics BS TCH COM-BS: Technical Communication BS AE ENG-BS: Aerospace Engineering BS AP MATH-BS: Applied Mathematics BS BIO SC-BA: Biological Sciences BA CV ENG-BS: Civil Engineering BS CP ENG-BS: Computer Engineering BS EL ENG-BS: Electrical Engineering BS GE ENG-BS: Geological Engineering BS CHEM-BS: Chemistry BS WRTG-MI: Writing Minor HISTORY-BS: Bachelor of Science in History CMP SC-BS: Computer Science BS TCH CM-CTU: Technical Communication CTU ECON-BA: Economics BA ENG MG-BS: Engineering Management BS EV ENG-BS: Environmental Engineering BS GL&GPH-BS: Geology and Geophysics BS MC ENG-BS: Mechanical Engineering BS MT ENG-BS: Metallurgical Engineering BS MI ENG-BS: Mining Engineering BS
Other Courses referencing this course	In The Prerequisites: COMP ENG 4096 : Computer Engineering Senior Project I ELEC ENG 4096 : Electrical Engineering Senior Project I ENGLISH 5571 : Advanced Writing For Science & Engineering ENGLISH 5572 : Advanced Writing For Science And Engineering II

In Workflow

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

Approval Path

1. 03/25/20 12:54 pm
   Kristine Swenson (kswenson): Approved for RENGLISH Chair
2. 03/25/20 12:56 pm
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 03/25/20 1:03 pm
   Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Requested Effective Change Date	**Fall 2020** ~~08/14/2018~~
Department	English and Technical Communication
Discipline	English (ENGLISH)
Course Number	3560
Title	Technical Writing
Abbreviated Course Title	Technical Writing

Catalog Description	The theory and practice of writing technical papers and reports in the professions.
Prerequisites	English 1120 ~~and second-semester junior standing.~~
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:	We would like to eliminate the second-semester junior standing requirement because many students need this course earlier in their college careers and were therefore opting for less appropriate writing electives.
Semesters previously offered as an experimental course	
Co-Listed Courses:	

Course Reviewer Comments	**kristyg (03/25/20 12:56 pm):** Changed effective date to FS 2020

Key: 673

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/03/20 2:13 pm

Viewing: **GEO ENG 5810 : Fundamentals of Space Resources**

File: 4552

Last edit: 04/03/20 3:18 pm

Changes proposed by: gertschl

Programs referencing this course	PROPOSED: Spaces Resources Certificate

Requested Effective Change Date	Fall 2020
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Geological Engineering (GEO ENG)
Course Number	5810
Title	Fundamentals of Space Resources
Abbreviated Course Title	Fund Space Resources

Catalog Description

Introduction to the science of the mineral resources of space, and to the engineering of extracting them for human use.

Prerequisites

Field Trip Statement

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

Required for Majors	No

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. CAT entry
11. Peoplesoft

Approval Path

1. 07/09/18 11:27 am
   David Borrok (borrokd): Approved for RGEOSENG Chair
2. 07/09/18 1:58 pm
   Brittany Parnell (ershenb): Approved for CCC Secretary
3. 08/29/18 1:44 pm
   Stephen Raper (sraper): Rollback to CCC Secretary for Engineering DSCC Chair
4. 08/31/18 8:36 am
   Brittany Parnell

Elective for Majors	Yes

Justification for new course:

This is the required introductory course for the graduate certificate in Space Resources.

Semesters previously offered as an experimental course

None.

Co-Listed Courses:

Course Reviewer Comments

sraper (08/29/18 1:44 pm): Rollback: This coursed is not part of a new graduate certificate at this time so it cannot be approved as a required course. I sent an email to the originator of the form indicating we could not approve the form yet.

ershenb (08/31/18 8:36 am): Rollback: Rollback per Dr. Raper's comment: This coursed is not part of a new graduate certificate at this time so it cannot be approved as a required course. I sent an email to the originator of the form indicating we could not approve the form yet.

(ershenb): Rollback to Initiator

5. 04/03/20 2:32 pm David Borrok (borrokd): Approved for RGEOSENG Chair
6. 04/03/20 3:18 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
7. 04/22/20 8:49 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

Key: 4552

Preview Bridge

Course Change Request

Date Submitted: 04/07/20 11:40 am

Viewing: GEOPHYS 3210 : Introduction to Geophysics

File: 745.2

Last approved: 05/04/15 3:20 am

Last edit: 04/07/20 11:40 am

Changes proposed by: locmelism

Programs referencing this course	GL&GPH-BS: Geology and Geophysics BS
Other Courses referencing this course	In The Prerequisites: GEOPHYS 5231 : Seismic Data Processing GEOPHYS 5261 : Computational Geophysics GEOPHYS 6211 : Advanced Seismic Interpretation GEOPHYS 6241 : The Theory of Elastic Waves GEOPHYS 6251 : Geophysical Inverse Theory

Requested Effective Change Date	**08/14/2018** ~~08/17/2015~~
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Geophysics (GEOPHYS)
Course Number	3210
Title	Introduction to Geophysics
Abbreviated Course Title	Introduction to Geophysics

Catalog Description

An introduction to a broad area of solid earth geophysics and exploration geophysics. Topics include plate tectonics, earthquake study, structure and dynamics of the Earth's deep interior, gravity, magnetism, heat flow, and geophysical exploration for natural resources.

Prerequisites

~~Math 1208 and~~ Geology 1110.

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. CAT entry
11. Peoplesoft

Approval Path

1. 04/07/20 2:12 pm David Borrok (borrokd): Approved for RGEOSENG Chair
2. 04/09/20 9:39 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/17/20 1:58 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair

History

Field Trip Statement	1. May 4, 2015 by liukh (745.1)

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

Justification for change:	Remove MATH 1208 prerequisite. Advanced mathematical concepts are not needed in this introductory level course.
Semesters previously offered as an experimental course	
Co-Listed Courses:	

Course Reviewer Comments

Key: 745

Preview Bridge

Course Change Request

Date Submitted: 03/08/20 8:13 pm

Viewing: IS&T 3423 : Database Management

File: 259.13

Last approved: 10/29/18 5:56 am

Last edit: 03/08/20 8:13 pm

Changes proposed by: cecq8z

Programs referencing this course	ANA&DTA-MI: Business Analytics and Data Science Minor BUSAPPS-MI: Business Applications and Software Development Minor IST-BS: Information Science and Tch BS
Other Courses referencing this course	In The Prerequisites: ERP 6444 : Essentials of Data Warehouses IS&T 3343 : Systems Analysis IS&T 4444 : Introduction to Data Warehouses

Requested Effective Change Date	Spring 2019
Department	Business and Information Technology
Discipline	Info Science & Technology (IS&T)
Course Number	3423
Title	Database Management
Abbreviated Course Title	Database Management

Catalog Description

The course introduces the concepts of database management systems. Issues in database architecture, design, administration, and implementation are covered.

Prerequisites

IS&T 1750; A grade of "C" or better in IS&T **1551** ~~1562~~ or IS&T **1561** ~~1552~~ or Comp Sci **1570.** ~~1575.~~

Field Trip Statement

In Workflow

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

Approval Path

1. 04/24/20 10:40 am
   siauk: Approved for RINFSCTE Chair
2. 04/24/20 2:44 pm
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 3:26 pm
   Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair

History

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

1. Apr 3, 2017 by barryf (259.1)
2. Aug 24, 2018 by ershenb (259.8)
3. Oct 29, 2018 by barryf (259.10)

Justification for change:	The old prerequisites (one year of computer programming) made it difficult for students to graduate on time- the course is required for IS&T majors. The new prerequisites call for the students to be exposed to computer programming. The new instructor feels exposure to programming is sufficient to impart the necessary skills. The programming taught in the course is SQL, a declarative language, which requires different thinking from the procedural languages taught in traditional programming courses.
Semesters previously offered as an experimental course	
Co-Listed Courses:	

Course Reviewer Comments

Key: 259

Preview Bridge

Course Change Request

Date Submitted: 03/08/20 8:14 pm

Viewing: **IS&T 4261 : Information Systems Project Management**

File: 935.8

Last approved: 06/29/15 3:51 am

Last edit: 03/08/20 8:14 pm

Changes proposed by: cecq8z

Programs referencing this course	MGMT-MI: Management Minor

Requested Effective Change Date	**08/14/2018** ~~01/12/2016~~
Department	Business and Information Technology
Discipline	Info Science & Technology (IS&T)
Course Number	4261
Title	Information Systems Project Management
Abbreviated Course Title	Info Syst Project Mgt

Catalog Description

The course overviews general project management principles and then focuses on information system application development. Topics include requirements analysis, project scheduling, risk management, quality assurance, testing, and team coordination.

Prerequisites

A grade of "C" ~~IST 1552~~ or **better in IS&T 1551 or IS&T 1561 or** Comp Sci **1570.** ~~1510; Senior Standing.~~

Field Trip Statement

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

In Workflow

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

Approval Path

1. 04/24/20 10:41 am
   siauk: Approved for RINFSCTE Chair
2. 04/24/20 2:45 pm
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 3:26 pm
   Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair

History

Elective for Majors	Yes

1. Apr 28, 2014 by barryf (935.1)
2. Jun 30, 2014 by lahne (935.4)
3. Jun 29, 2015 by barryf (935.5)

Justification for change:

The existing record references courses that no longer exist given the revised Comp Sci curriculum. Also, the department wishes to relax the prerequisites given a revised syllabus. The new syllabus only requires students to be exposed to computer programming to recognize how difficult it is, so the class can discuss how programming can be managed.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 935

Preview Bridge

Course Change Request

Date Submitted: 04/20/20 10:17 am

Viewing: IS&T 5423 : Foundations of Data Management

File: 2339.1

Last edit: 04/20/20 10:17 am

Changes proposed by: kristyg

Other Courses referencing this course	In The Prerequisites: IS&T 6444 : Essentials of Data Warehouses

Requested Effective Change Date	**Fall 2020** ~~08/14/2017~~
Department	Business and Information Technology
Discipline	Info Science & Technology (IS&T)
Course Number	5423
Title	Foundations of Data Management
Abbreviated Course Title	Foundations Data Mgmt

Catalog Description

Foundational concepts of database management systems. Issues in database architecture, design, administration, and implementation. Extensive use of SQL with Oracle to create and manage databases. Significant project dealing with triggers or stored procedures.

Prerequisites

Strong programming knowledge required. ~~IS&T 1750, IS&T 1552, and graduate standing.~~

Field Trip Statement

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

Required for Majors	No

In Workflow

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

Approval Path

1. 04/24/20 10:52 am
   siauk: Approved for RINFSCTE Chair
2. 04/24/20 2:45 pm
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 3:26 pm
   Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair

Elective for Majors	No

Justification for change:	Updated for department because of CL issue
Semesters previously offered as an experimental course	
Co-Listed Courses:	

Course Reviewer Comments

Key: 2339

Preview Bridge

Course Change Request

Date Submitted: 03/08/20 8:15 pm

Viewing: **IS&T 6261 : Advanced Information Systems Project Management**

File: 2254.6

Last approved: 09/24/14 3:46 am

Last edit: 03/08/20 8:15 pm

Changes proposed by: cecq8z

Programs referencing this course	PR MGTI-CT: Info System Project Mgmt CT IST-MS: Info Science & Tech MS

Requested Effective Change Date	08/01/2014
Department	Business and Information Technology
Discipline	Info Science & Technology (IS&T)
Course Number	6261
Title	Advanced Information Systems Project Management
Abbreviated Course Title	Adv IS Project Management

Catalog Description

Project management principles, first from a general perspective, and then focused specifically on information system application development are explored. Topics include requirements analysis, project scheduling, risk management, quality assurance, testing, and team coordination. Report writing and research literature searches are required.

Prerequisites

Strong programming knowledge required. ~~IS&T MS Entrance requirements, with strong programming knowledge.~~

Field Trip Statement

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

In Workflow

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

Approval Path

1. 04/24/20 10:57 am
   siauk: Approved for RINFSCTE Chair
2. 04/24/20 2:45 pm
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 3:26 pm
   Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair

History

Required for Majors	No
Elective for Majors	No

1. May 1, 2014 by barryf (2254.1)
2. Sep 24, 2014 by lahne (2254.4)

Justification for change:	Course has been restructured to be more accessible to MBA students especially those taking the Management and Leadership Certificate.
Semesters previously offered as an experimental course	
Co-Listed Courses:	
Course Reviewer Comments	

Key: 2254

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/03/20 9:11 am

Viewing: **MUSIC 1144 : Jazz Choir**

File: 4695

Last edit: 04/03/20 9:11 am

Changes proposed by: karmannc

Requested Effective Change Date	Fall 2020
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	1144
Title	Jazz Choir
Abbreviated Course Title	Jazz Choir

Catalog Description

A cappella choral group with an emphasis on jazz music. Students will learn and perform pieces each semester at the choral concerts as well as at other venues as opportunities arise.

Prerequisites

None

Field Trip Statement

None

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

Justification for new course:

Part of the revised music minor and student interest.

In Workflow

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

Approval Path

1. 03/25/20 3:15 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 03/26/20 10:20 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 03/26/20 2:23 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

tibbettsmg (04/03/20 8:49 am): Rollback: I recently found out that the Jazz Choir is one of the ensembles mentioned in our revised Music Minor and will need a permanent number. Thank you, Courtney

audram (04/03/20 8:59 am): Rollback: Please fix course number

Key: 4695

4. 04/03/20 8:49 am Marita Tibbetts (tibbettsmg): Rollback to Initiator
5. 04/03/20 8:59 am Audra Merfeld-Langston (audram): Rollback to Initiator
6. 04/03/20 1:44 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
7. 04/03/20 3:19 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
8. 04/03/20 4:09 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 03/31/20 2:49 pm

Viewing: **MUSIC 1151 : Music of Latin America**

File: 4697

Last edit: 03/31/20 2:49 pm

Changes proposed by: karmannc

Requested Effective Change Date	Fall 2020
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	1151
Title	Music of Latin America
Abbreviated Course Title	Music of Latin America

Catalog Description

Music of Latin America will have an emphasis on music as a universal language. Students will gain an understanding that all cultures have a musical tradition, and recognizing this tradition contributes to the appreciation of each culture. Course will include discussions of Latin American influences on classical and Latino popular music.

Prerequisites

None

Field Trip Statement

None

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

Required for Majors	No
Elective for Majors	No

Justification for new course:

In Workflow

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

Approval Path

1. 03/31/20 6:41 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 04/03/20 3:19 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/03/20 4:12 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

This course is to be part of the music minor

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 4697

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 03/31/20 3:13 pm

Viewing: **MUSIC 2163 : Introduction to Composition and Arranging**

File: 4698

Last edit: 03/31/20 3:13 pm

Changes proposed by: karmannc

Requested Effective Change Date	Fall 2020
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	2163
Title	Introduction to Composition and Arranging
Abbreviated Course Title	Music Comp & Arranging

Catalog Description

Without composers there would be no music. In this course students will learn to create new musical ideas, develop those ideas, and create an original short piece of music. In addition students will learn how to take existing pieces of music and arrange them for various ensembles through a basic course in orchestration.

Prerequisites

Preceded or accompanied by Music 1130, Music 1131, Music, 1132, Music 1134, Music 1135, or Music 1136.

Field Trip Statement

None

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

In Workflow

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

Approval Path

1. 03/31/20 6:40 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 04/03/20 3:19 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/03/20 4:12 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Justification for new course:	Part of revised music minor
Semesters previously offered as an experimental course	Spring 2020
Co-Listed Courses:	

Course Reviewer Comments

Key: 4698

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/09/20 11:44 am

Viewing: **MUSIC 3253 : History of Music in Film**

File: 4706

Last edit: 04/09/20 11:44 am

Changes proposed by: karmannc

Requested Effective Change Date	Spring 2021
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	3253
Title	History of Music in Film
Abbreviated Course Title	History of Music in Film

Catalog Description

This course takes an in depth look into the world of film music and the composers who make it. We will discuss what techniques comprise a great film score and what traits and come back again and again. Together we will take a journey from the first film score in 1933 all the way to the present, visiting many important films and figures along the way.

Prerequisites

Sophomore standing

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 new course:

In Workflow

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

Approval Path

1. 04/09/20 1:39 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 04/10/20 4:25 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/10/20 4:54 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Part of the revised Music Minor

Semesters previously offered as an experimental course	Spring 2020
Co-Listed Courses:	History 3723 - Course Not Found

Course Reviewer Comments

Key: 4706

Preview Bridge

Course Change Request

Date Submitted: 04/03/20 10:32 am

Viewing: **PHILOS 1105 : Self and World: Introduction To Philosophy**

File: 1224.1

Last edit: 04/03/20 10:32 am

Changes proposed by: gamezp

Programs referencing this course	PRE LAW-MI: Pre Law Minor CHEM-BA: Chemistry BA PHIL-MI: Philosophy Minor PHILTCH-MI: Philosophy of Technology Minor PHIL-BS: Philosophy BS ETHICS-MI: Ethics Minor

Requested Effective Change Date	**Spring 2021** ~~Fall 2018~~
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	1105
Title	**Self and World:** Introduction To Philosophy
Abbreviated Course Title	**Self and World** ~~Introd To Philosophy~~

Catalog Description

What is real? What is human being? How can we know any of these things? This course is a ~~An historical~~ survey of the major approaches to philosophical problems, especially those of the nature of reality, human nature, and conduct. **Students will both be introduced to the study of philosophy and develop skills in creative inquiry and critical reasoning.**

Prerequisites

Entrance requirements.

Field Trip Statement

In Workflow

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

Approval Path

1. 02/05/20 6:07 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 02/17/20 9:30 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 02/17/20 9:32 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

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

Justification for change:

The Philosophy faculty in ALP have received strong encouragement from the Interim Vice Provost and Dean, as well as the interim Assistant Dean for Academic Affairs to change the names and descriptions of our philosophy courses to help increase enrolment by making them clearer and more up to date. We have been given assurance that relatively drastic changes to superficial things like course title and description text are fine. Many of the descriptions have been changed because they were written poorly - often uninformative and ungrammatical - by faculty who are no longer at S&T. Fixing mistakes should not require new experimental courses, especially as the content of the courses remains unchanged.

In this case, we've kept all the content from the original description, except for the unreasonable requirement that the course needs to be taught historically, which does not actually match the way the course is actually taught. So this is effectively just a name change, with added information about the skills that will be gained and types of questions that will be pursued.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (04/02/20 9:20 am): Rollback: Rollback for departmental discussion and evaluation.

kristyg (04/02/20 9:22 am): Rollback: Rollback for departmental discussion and evaluation.

audram (04/03/20 8:53 am): Rollback: Please make appropriate edits.

Key: 1224

4. 02/24/20 1:14 pm Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 04/02/20 9:20 am Kristy Giacomelli-Feys (kristyg): Rollback to Pending CCC Agenda post for CCC Meeting Agenda
6. 04/02/20 9:22 am Kristy Giacomelli-Feys (kristyg): Rollback to RPHILOSO Chair for Pending CCC Agenda post
7. 04/03/20 8:53 am Audra Merfeld-Langston (audram): Rollback to Initiator
8. 04/03/20 11:14 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
9. 04/03/20 3:19 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
10. 04/03/20 4:13 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Preview Bridge

Course Change Request

Date Submitted: 04/03/20 10:33 am

Viewing: **PHILOS 1115 : ~~Introduction To~~ Logic and Reasoning: An Introduction**

File: 2226.1

Last edit: 04/03/20 10:33 am

Changes proposed by: gamezp

Programs referencing this course	PRE LAW-MI: Pre Law Minor PHILTCH-MI: Philosophy of Technology Minor PHIL-BS: Philosophy BS ETHICS-MI: Ethics Minor MIL SC-MI: Adaptive Leadership Minor

Requested Effective Change Date	**Spring 2021** ~~Fall 2018~~
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	1115
Title	~~Introduction To~~ Logic **and Reasoning: An Introduction**
Abbreviated Course Title	~~Introduction To~~ Logic **and Reasoning**

Catalog Description

Beliefs should be supported by reasons. But are these reasons good enough? How could one know? In this course, students will learn ~~A study of~~ the basic rules of both formal **and symbolic logic,** ~~and symbolic logic,~~ including types of argumentation, methods of reasoning, valid reasoning, inductive and deductive reasoning as used in the sciences and in communication in general.

Prerequisites

Entrance requirements.

Field Trip Statement

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

In Workflow

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

Approval Path

1. 02/05/20 6:08 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 02/17/20 9:30 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 02/17/20 9:34 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Required for Majors	No
Elective for Majors	No

Justification for change:

This proposed change simply provides more content as to the sorts of themes and topics students already cover in the course, and uses most of the original description to do so; this is not a very drastic change.

The Philosophy faculty in ALP have received strong encouragement from the Interim Vice Provost and Dean, as well as the interim Assistant Dean for Academic Affairs to change the names and descriptions of our philosophy courses to help increase enrolment by making them clearer and more up to date. We have been given assurance that relatively drastic changes to superficial things like course title and description text are fine. Many of the descriptions have been changed because they were written poorly - often uninformative and ungrammatical - by faculty who are no longer at S&T. Fixing mistakes should not require new experimental courses, especially as the content of the courses remains unchanged.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

dewittp (02/17/20 9:34 am): Updated language in description
kristyg (04/02/20 9:20 am): Rollback: Rollback for departmental discussion and evaluation.
kristyg (04/02/20 9:22 am): Rollback: Rollback for departmental discussion and evaluation.
audram (04/03/20 8:53 am): Rollback: Please make appropriate edits.

Key: 2226

4. 02/24/20 1:15 pm Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 04/02/20 9:20 am Kristy Giacomelli-Feys (kristyg): Rollback to Pending CCC Agenda post for CCC Meeting Agenda
6. 04/02/20 9:22 am Kristy Giacomelli-Feys (kristyg): Rollback to RPHILOSO Chair for Pending CCC Agenda post
7. 04/03/20 8:53 am Audra Merfeld-Langston (audram): Rollback to Initiator
8. 04/03/20 11:15 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
9. 04/03/20 3:19 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
10. 04/03/20 4:13 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Preview Bridge

Course Change Request

Date Submitted: 04/03/20 10:33 am

Viewing: **PHILOS 1175 : Religion and the Idea of God: Diverse Perspectives ~~Comparative Religious Philosophy~~**

File: 2227.1

Last edit: 04/03/20 10:33 am

Changes proposed by: gamezp

Programs referencing this course	ECON-BS: Economics BS ETHICS-MI: Ethics Minor

Requested Effective Change Date	**Spring 2021** ~~Fall 2018~~
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	1175
Title	**Religion and the Idea of God: Diverse Perspectives** ~~Comparative Religious Philosophy~~
Abbreviated Course Title	**Religion Diverse Perspec** ~~Comparative Relig Phil~~

Catalog Description

A comparison of the philosophic ideas and foundations of the major Eastern and Western religions.

Prerequisites

Entrance requirements.

Field Trip Statement

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

In Workflow

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

Approval Path

1. 02/05/20 6:10 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 02/17/20 9:30 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 02/17/20 9:38 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Elective for Majors	No

Justification for change:

Today's students have very little familiarity with philosophy, let alone "comparative" philosophy, and this name change makes explicit some of the core topics of comparative religious philosophy, and also makes clear that we will be exploring very diverse approaches to the topics.

We've changed the proposed date to Spring 2021. Otherwise I'm not sure what the issue is - the description remains the same; this is just a title change. Today's students have very little familiarity with philosophy, let alone "comparative" philosophy, and this name change makes explicit some of the core topics of comparative religious philosophy, and also makes clear that we will be exploring very diverse approaches to the topics.

The Philosophy faculty in ALP have received strong encouragement from the Interim Vice Provost and Dean, as well as the interim Assistant Dean for Academic Affairs to change the names and descriptions of our philosophy courses to help increase enrolment by making them clearer and more up to date. We have been given assurance that relatively drastic changes to superficial things like course title and description text are fine. Many of the descriptions have been changed because they were written poorly - often uninformative and ungrammatical - by faculty who are no longer at S&T. Fixing mistakes should not require new experimental courses, especially as the content of the courses remains unchanged.

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Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

dewittp (02/17/20 9:38 am): Updated abbreviated course title to fit new title
kristyg (04/02/20 9:20 am): Rollback: Rollback for departmental discussion and evaluation.
kristyg (04/02/20 9:23 am): Rollback: Rollback for departmental discussion and evaluation.
audram (04/03/20 8:53 am): Rollback: Please make appropriate edits.

4. 02/24/20 1:16 pm Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 04/02/20 9:20 am Kristy Giacomelli-Feys (kristyg): Rollback to Pending CCC Agenda post for CCC Meeting Agenda
6. 04/02/20 9:23 am Kristy Giacomelli-Feys (kristyg): Rollback to RPHILOSO Chair for Pending CCC Agenda post
7. 04/03/20 8:53 am Audra Merfeld-Langston (audram): Rollback to Initiator
8. 04/03/20 11:17 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
9. 04/03/20 3:19 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
10. 04/03/20 4:14 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Key: 2227

Preview Bridge

Course Change Request

Date Submitted: 04/03/20 10:34 am

Viewing: **PHILOS 3204 : Wisdom and Virtue: An Introduction to Ancient Philosophy**

File: 4246.2

Last approved: 10/19/15 3:34 am

Last edit: 04/03/20 10:34 am

Changes proposed by: gamezp

Requested Effective Change Date	**Spring 2021** ~~01/12/2016~~
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	3204
Title	**Wisdom and Virtue: An Introduction to** Ancient Philosophy
Abbreviated Course Title	**Wisdom and Virtue** ~~Ancient Philosophy~~

Catalog Description

A study of **central themes in ancient philosophy, including** ~~selected philosophical works from~~ the **nature** ~~pre-Socratics to William~~ of **knowledge and reality, and the path to virtue and.** ~~Occam.~~ **the importance of wisdom, through selected philosophical works from the pre-Socratics to William of Occam.**

Prerequisites

An introductory (below 2000) level Philosophy course.

Field Trip Statement

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

In Workflow

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

Approval Path

1. 02/05/20 6:11 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 02/17/20 9:31 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 02/17/20 9:39 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Justification for change:

The previous description and course title were not sufficiently informative for prospective students. Further, ancient philosophy is distinctive in its approaches and central concerns - it is not simply "old" philosophy, to be studied for its own sake, and both the title and description should reflect this. The new description incorporates the old one, completely, but gives a little more context and information. The same is true of the title. Really, not much has changed.

The Philosophy faculty in ALP have received strong encouragement from the Interim Vice Provost and Dean, as well as the interim Assistant Dean for Academic Affairs to change the names and descriptions of our philosophy courses to help increase enrolment by making them clearer and more up to date. We have been given assurance that relatively drastic changes to superficial things like course title and description text are fine. Many of the descriptions have been changed because they were written poorly - often uninformative and ungrammatical - by faculty who are no longer at S&T. Fixing mistakes should not require new experimental courses, especially as the content of the courses remains unchanged.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (04/02/20 9:21 am): Rollback: Rollback for departmental discussion and evaluation.

kristyg (04/02/20 9:23 am): Rollback: Rollback for departmental discussion and evaluation.

audram (04/03/20 8:53 am): Rollback: Please make appropriate edits.

Key: 4246

4. 02/24/20 1:16 pm Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 04/02/20 9:21 am Kristy Giacomelli-Feys (kristyg): Rollback to Pending CCC Agenda post for CCC Meeting Agenda
6. 04/02/20 9:23 am Kristy Giacomelli-Feys (kristyg): Rollback to RPHILOSO Chair for Pending CCC Agenda post
7. 04/03/20 8:53 am Audra Merfeld-Langston (audram): Rollback to Initiator
8. 04/03/20 11:17 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
9. 04/03/20 3:20 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
10. 04/03/20 4:14 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

History

1. Oct 19, 2015 by Denise Sharp (denises)

Preview Bridge

Course Change Request

Date Submitted: 04/03/20 10:34 am

Viewing: **PHILOS 3205 : Science, Souls, and Skepticism: Early Modern Philosophy**

File: 1754.10

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

Last edit: 04/03/20 10:34 am

Changes proposed by: gamezp

Requested Effective Change Date	**Spring 2021** ~~01/12/2016~~
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	3205
Title	**Science, Souls, and Skepticism:** Early Modern Philosophy
Abbreviated Course Title	Early Modern Philosophy

Catalog Description

This course explores how radical shifts ~~Principal figures~~ in **worldview** ~~the development~~ of **the early modern period impacted the themes** ~~rationalism, empiricism,~~ and **methods of philosophy, such as empiricism, rationalism, and skepticism, and what we can learn** ~~skepticism in early modern Europe,~~ from **them today.** ~~Descartes through Hume.~~ **Figures studied may range from Hobbes, Bacon, and Descartes to Hume.**

Prerequisites

A previous class in philosophy is recommended.

Field Trip Statement

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

In Workflow

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

Approval Path

1. 02/05/20 6:11 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 02/17/20 9:31 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 02/17/20 9:39 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Justification for change:

While "early modern philosophy" is useful for professional philosophers and historians of ideas, it does not give a sufficient sense of the main topics or figures for undergraduate students. The new title and description are much more informative.

The proposed changed description should be acceptable. It contains literally all of the information in the old description, but uses complete sentences and is more informative. Literally none of the existing content has been changed.

The Philosophy faculty in ALP have received strong encouragement from the Interim Vice Provost and Dean, as well as the interim Assistant Dean for Academic Affairs to change the names and descriptions of our philosophy courses to help increase enrolment by making them clearer and more up to date. We have been given assurance that relatively drastic changes to superficial things like course title and description text are fine. Many of the descriptions have been changed because they were written poorly - often uninformative and ungrammatical - by faculty who are no longer at S&T. Fixing mistakes should not require new experimental courses, especially as the content of the courses remains unchanged.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (04/02/20 9:21 am): Rollback: Rollback for departmental discussion and evaluation.

audram (04/03/20 8:53 am): Rollback: Please make appropriate edits.

Key: 1754

4. 02/24/20 1:18 pm Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 04/02/20 9:21 am Kristy Giacomelli-Feys (kristyg): Rollback to RPHILOSO Chair for CCC Meeting Agenda
6. 04/03/20 8:53 am Audra Merfeld-Langston (audram): Rollback to Initiator
7. 04/03/20 11:18 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
8. 04/03/20 3:20 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
9. 04/03/20 4:14 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

History

1. Sep 21, 2015 by denises (1754.1)

Preview Bridge

Course Change Request

Date Submitted: 04/03/20 10:34 am

Viewing: **PHILOS 3302 : Philosophy in the Middle Ages ~~Medieval Philosophy~~**

File: 4196.4

Last approved: 05/04/15 3:20 am

Last edit: 04/03/20 10:34 am

Changes proposed by: gamezp

Requested Effective Change Date	**Spring 2021** ~~08/17/2015~~
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	3302
Title	**Philosophy in the Middle Ages** ~~Medieval Philosophy~~
Abbreviated Course Title	Medieval Philosophy

Catalog Description

A critical study of the important philosophies of the period from Augustine to the Renaissance. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

Prerequisites

A previous class in philosophy is recommended.

Field Trip Statement

None

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

Justification for change:

In Workflow

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

Approval Path

1. 02/06/20 8:49 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 02/17/20 9:31 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 02/17/20 9:40 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

The new title will be more appealing to students, and communicate the same content without the ominous connotations of "medieval."

Otherwise, nothing has changed in terms of description or course content.

The Philosophy faculty in ALP have received strong encouragement from the Interim Vice Provost and Dean, as well as the interim Assistant Dean for Academic Affairs to change the names and descriptions of our philosophy courses to help increase enrolment by making them clearer and more up to date. We have been given assurance that relatively drastic changes to superficial things like course title and description text are fine. Many of the descriptions have been changed because they were written poorly - often uninformative and ungrammatical - by faculty who are no longer at S&T. Fixing mistakes should not require new experimental courses, especially as the content of the courses remains unchanged.

Semesters previously offered as an experimental course

Summer 2010, Spring 2015

Co-Listed Courses:

Course Reviewer Comments

kristyg (04/02/20 9:21 am): Rollback: Rollback for departmental discussion and evaluation.

audram (04/03/20 8:53 am): Rollback: Please make appropriate edits.

Key: 4196

4. 02/24/20 1:20 pm Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 04/02/20 9:21 am Kristy Giacomelli-Feys (kristyg): Rollback to RPHILOSO Chair for CCC Meeting Agenda
6. 04/03/20 8:53 am Audra Merfeld-Langston (audram): Rollback to Initiator
7. 04/03/20 11:18 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
8. 04/03/20 3:20 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
9. 04/03/20 4:14 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

History

1. May 4, 2015 by Denise Sharp (denises)

Preview Bridge

Course Change Request

Date Submitted: 04/03/20 10:35 am

Viewing: **PHILOS 4325 : Who Knows What?**

~~Epistemology:~~Knowledge, Truth, ~~Knowledge~~ and Justification

File: 4023.8

Last approved: 05/01/14 4:14 am

Last edit: 04/03/20 10:35 am

Changes proposed by: gamezp

Requested Effective Change Date	**Spring 2021** ~~08/01/2014~~
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	4325
Title	**Who Knows What? ~~Epistemology:~~Knowledge, Truth, ~~Knowledge~~** and Justification
Abbreviated Course Title	**Who Knows What?** ~~Epistemology~~

Catalog Description

What is knowledge? Do we have it? Can we know that we have it? How do we get it? Are there different kinds of knowledge? An introduction to ~~the field of~~ epistemology, the study **of the** ~~of the~~ scope, ~~the~~ limits, ~~the~~ sources, and ~~the~~ nature of knowledge and justified **belief. Possible topics include knowledge and justification, skepticism, scientific knowledge, and naturalism.** ~~belief. Includes analyses of knowledge and justification, skepticism, scientific knowledge, and naturalism, among other topics.~~

Prerequisites

Any 1000 or higher level philosophy course. Philosophy 1105 recommended.

Field Trip Statement

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

In Workflow

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

Approval Path

1. 02/06/20 8:51 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 02/17/20 9:31 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 02/17/20 9:40 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Elective for Majors	Yes

Justification for change:

Even higher level students will be unfamiliar with technical terms like "epistemology." The new title accurately conveys the content of the course, and the new description uses familiar language to describe the central questions that the course explores.

Moreover, the new description contains over 50% of the text and all of the relevant content from the existing description. While it appears to be a radical change, very little has changed besides making it more accessible to students.

The Philosophy faculty in ALP have received strong encouragement from the Interim Vice Provost and Dean, as well as the interim Assistant Dean for Academic Affairs to change the names and descriptions of our philosophy courses to help increase enrolment by making them clearer and more up to date. We have been given assurance that relatively drastic changes to superficial things like course title and description text are fine. Many of the descriptions have been changed because they were written poorly - often uninformative and ungrammatical - by faculty who are no longer at S&T. Fixing mistakes should not require new experimental courses, especially as the content of the courses remains unchanged.

Semesters previously offered as an experimental course

Fall 2012, Fall 2013

Co-Listed Courses:

Course Reviewer Comments

kristyg (04/02/20 9:21 am): Rollback: Rollback for departmental discussion and evaluation.

audram (04/03/20 8:53 am): Rollback: Please make appropriate edits.

4. 02/24/20 1:21 pm Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 04/02/20 9:21 am Kristy Giacomelli-Feys (kristyg): Rollback to RPHILOSO Chair for CCC Meeting Agenda
6. 04/03/20 8:53 am Audra Merfeld-Langston (audram): Rollback to Initiator
7. 04/03/20 11:20 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
8. 04/03/20 3:20 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
9. 04/03/20 4:14 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Key: 4023

History

1. May 1, 2014 by Denise Sharp (denises)

Preview Bridge

Course Change Request

Date Submitted: 04/03/20 10:35 am

Viewing: **PHILOS 4340 : From Activism to Zoos: Issues in Social Ethics**

File: 2510.7

Last approved: 03/06/17 3:15 am

Last edit: 04/03/20 10:35 am

Changes proposed by: gamezp

Programs referencing this course	MUL&DIV-MI: Multiculture & Diversity Minor PRE LAW-MI: Pre Law Minor CMP SC-BS: Computer Science BS ECON-BS: Economics BS ETHICS-MI: Ethics Minor
Other Courses referencing this course	In The Prerequisites: COMP SCI 4090 : Software Engineering Capstone I

Requested Effective Change Date	**Spring 2021** ~~08/14/2017~~
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	4340
Title	**From Activism to Zoos: Issues in** Social Ethics
Abbreviated Course Title	Social Ethics

Catalog Description

This Communication Emphasized course discusses ethical issues confronting society and the arguments offered for alternative laws and public policies. Topics might include: freedom of speech/action, government regulation, welfare, capital punishment, euthanasia, abortion, the environment, affirmative action, just wars, foreign aid, world hunger.

Prerequisites

Any philosophy course.

In Workflow

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

Approval Path

1. 02/05/20 6:13 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 02/17/20 9:31 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 02/17/20 9:40 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

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 original title was wildly uninformative, and did not do enough to differentiate this course, which is an application-focused study of concrete ethical issues, from a regular ethics course, which would focus on normative theory as such.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (04/02/20 9:21 am): Rollback: Rollback for departmental discussion and evaluation.

audram (04/03/20 8:54 am): Rollback: Please make appropriate edits.

Key: 2510

4. 02/24/20 1:21 pm Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 04/02/20 9:21 am Kristy Giacomelli-Feys (kristyg): Rollback to RPHILOSO Chair for CCC Meeting Agenda
6. 04/03/20 8:54 am Audra Merfeld-Langston (audram): Rollback to Initiator
7. 04/03/20 11:20 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
8. 04/03/20 3:20 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
9. 04/03/20 4:15 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

History

1. Mar 6, 2017 by dittmerj (2510.1)

Preview Bridge

Course Change Request

Date Submitted: 04/03/20 10:36 am

Viewing: **PHILOS 4360 : Who Should Rule and Why? Debates in Political Philosophy ~~Foundations Of Political Conflict~~**

File: 1826.7

Last approved: 03/06/17 3:15 am

Last edit: 04/03/20 10:36 am

Changes proposed by: gamezp

Programs referencing this course	PRE LAW-MI: Pre Law Minor ETHICS-MI: Ethics Minor

Requested Effective Change Date	**Spring 2021** ~~08/14/2017~~
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	4360
Title	**Who Should Rule and Why? Debates in Political Philosophy** ~~Foundations Of Political Conflict~~
Abbreviated Course Title	**Who Should Rule and Why?** ~~Found-Political Conflict~~

Catalog Description

This course is designed as a survey of the philosophical **foundations** ~~foundation~~ of major political systems. For example, **liberalism, communitarianism,** communism, fascism, democracy. Materials will be drawn from relevant historical and/or contemporary sources.

Prerequisites

Any philosophy course.

Field Trip Statement

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

In Workflow

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

Approval Path

1. 02/05/20 6:13 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 02/17/20 9:32 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 02/17/20 9:41 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Required for Majors	No
Elective for Majors	No

Justification for change:

The original title was misleading and only tangentially related to the course description. The latter has been updated to more accurately reflect standard topics in political philosophy.

At any rate, almost nothing has been changed; the original description is almost completely the same, besides noting that in a course on the foundations of political systems we might look at two of the most influential political philosophies of the last 50 years. This is hardly radical.

The Philosophy faculty in ALP have received strong encouragement from the Interim Vice Provost and Dean, as well as the interim Assistant Dean for Academic Affairs to change the names and descriptions of our philosophy courses to help increase enrolment by making them clearer and more up to date. We have been given assurance that relatively drastic changes to superficial things like course title and description text are fine. Many of the descriptions have been changed because they were written poorly - often uninformative and ungrammatical - by faculty who are no longer at S&T. Fixing mistakes should not require new experimental courses, especially as the content of the courses remains unchanged.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (04/02/20 9:22 am): Rollback: Rollback for departmental discussion and evaluation.

audram (04/03/20 8:54 am): Rollback: Please make appropriate edits.

Key: 1826

4. 02/24/20 1:22 pm Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 04/02/20 9:22 am Kristy Giacomelli-Feys (kristyg): Rollback to RPHILOSO Chair for CCC Meeting Agenda
6. 04/03/20 8:54 am Audra Merfeld-Langston (audram): Rollback to Initiator
7. 04/03/20 11:24 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
8. 04/03/20 3:20 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
9. 04/03/20 4:15 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

History

1. Mar 6, 2017 by dittmerj (1826.1)

Preview Bridge

Course Change Request

Date Submitted: 04/01/20 11:08 am

Viewing: PSYCH 5600 : Advanced Social Psychology

File: 1567.1

Last edit: 04/03/20 3:20 pm

Changes proposed by: burnsde

Programs referencing this course	INORGPS-MS: Industrial Organizational Psychology MS

Requested Effective Change Date	**Fall 2020** ~~08/14/2018~~
Department	Psychological Science
Discipline	Psychology (PSYCH)
Course Number	5600
Title	Advanced Social Psychology
Abbreviated Course Title	Adv Social Psychology

Catalog Description

An advanced study of the behavior of individuals in interaction within groups. Consideration will also be given to the experimental literature dealing with the formal properties of groups, conformity and deviation, intergroup relations, and attitude formation and attitude change.

Prerequisites

Psych 4600 or graduate standing ~~Psych 4600.~~

Field Trip Statement

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

In Workflow

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

Approval Path

1. 04/01/20 11:10 am
   Susan Murray (murray): Approved for RPSYCHOL Chair
2. 04/03/20 3:20 pm
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/23/20 4:32 pm
   Kristy Giacomelli-Feys (kristyg): Approved for Social Sciences DSCC Chair

Justification for change:	edited prereqs
Semesters previously offered as an experimental course	
Co-Listed Courses:	

Course Reviewer Comments	**kristyg (04/03/20 3:20 pm):** Changed effective date to Fall 2020

Key: 1567

Preview Bridge

Course Change Request

Date Submitted: 04/01/20 11:09 am

Viewing: PSYCH 6602 : Employee Affect and Behavior

File: 4359.7

Last approved: 04/02/18 3:21 am

Last edit: 04/03/20 3:21 pm

Changes proposed by: burnsde

Programs referencing this course	INORGPS-MS: Industrial Organizational Psychology MS

Requested Effective Change Date	**Fall 2020** ~~05/28/2018~~
Department	Psychological Science
Discipline	Psychology (PSYCH)
Course Number	6602
Title	Employee Affect and Behavior
Abbreviated Course Title	Affect and Behavior

Catalog Description

Theory and research surrounding employee attitudes, emotions, and behaviors with an emphasis on antecedents and outcomes of: job satisfaction, engagement, organizational justice, trait and state positive and negative affect, organizational citizenship, counterproductive work, and proactive behaviors and the Implications for both employees and organizations.

Prerequisites

Psych **5020.** ~~5010.~~

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	Yes				

In Workflow

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

Approval Path

1. 04/01/20 11:10 am
   Susan Murray (murray): Approved for RPSYCHOL Chair
2. 04/03/20 3:21 pm
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/23/20 4:33 pm
   Kristy Giacomelli-Feys (kristyg): Approved for Social Sciences DSCC Chair

History

Elective for Majors	No

1. Jan 26, 2017 by Nathan Weidner (weidnern)
2. Apr 2, 2018 by weidnern (4359.4)

Justification for change:
changed the prereq

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments	**kristyg (04/03/20 3:21 pm):** Updated effective date term to Fall 2020

Key: 4359

Preview Bridge

Course Change Request

Date Submitted: 04/01/20 11:09 am

Viewing: PSYCH 6610 : Leadership, Motivation, and Culture

File: 2573.7

Last approved: 01/13/17 3:15 am

Last edit: 04/03/20 3:21 pm

Changes proposed by: burnsde

Programs referencing this course	INORGPS-MS: Industrial Organizational Psychology MS

Requested Effective Change Date	**Fall 2020** ~~08/14/2017~~
Department	Psychological Science
Discipline	Psychology (PSYCH)
Course Number	6610
Title	Leadership, Motivation, and Culture
Abbreviated Course Title	Advanced Leadership

Catalog Description

Examination of research related to leadership, motivation, and the impact of organizational culture on organizational performance will be discussed. The course will focus on the application of psychological theories to enhance organizational functioning and to promote positive workplace behaviors.

Prerequisites

Psych **5020.** ~~5010.~~

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	Yes				

In Workflow

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

Approval Path

1. 04/01/20 11:10 am
   Susan Murray (murray): Approved for RPSYCHOL Chair
2. 04/03/20 3:22 pm
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/23/20 4:33 pm
   Kristy Giacomelli-Feys (kristyg): Approved for Social Sciences DSCC Chair

History

Elective for Majors	No

1. Nov 3, 2014 by nstone (2573.1)
2. Jan 13, 2017 by weidnern (2573.4)

Justification for change:
changed the prereq

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments	**kristyg (04/03/20 3:21 pm):** Updated effective date term to Fall 2020

Key: 2573

Preview Bridge

Course Change Request

Date Submitted: 03/27/20 9:50 am

Viewing: TCH COM 5540 : Advanced Layout and Design

File: 702.1

Last edit: 03/27/20 12:10 pm

Changes proposed by: kswenson

Programs referencing this course	TCH COM-MS: Technical Communication MS

Requested Effective Change Date	**Fall 2020** ~~08/01/2014~~
Department	English and Technical Communication
Discipline	Technical Communication (TCH COM)
Course Number	5540
Title	Advanced Layout and Design
Abbreviated Course Title	Advanced Layout and Design

Catalog Description

Advanced theory and practice of layout and design for print and electronic media.
~~Students who have taken TCH COM 2540 may not take this course for credit.~~

Prerequisites

Graduate standing.

Field Trip Statement

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

In Workflow

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

Approval Path

1. 03/27/20 9:52 am Kristine Swenson (kswenson): Approved for RENGLISH Chair
2. 03/27/20 12:10 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 03/27/20 12:48 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Justification for change:	5540 and 2540 will no longer be co-listed and will be distinct enough so that students might benefit from both courses.
Semesters previously offered as an experimental course	
Co-Listed Courses:	

Course Reviewer Comments	**kristyg (03/27/20 12:10 pm):** Changed effective date to Fall 2020

Key: 702

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/03/20 11:14 am

Viewing: **THEATRE 1150 : Theatre for Social Change**

File: 4701

Last edit: 04/03/20 11:14 am

Changes proposed by: karmannc

Requested Effective Change Date	Spring 2021
Department	Arts, Languages, & Philosophy
Discipline	Theatre (THEATRE)
Course Number	1150
Title	Theatre for Social Change
Abbreviated Course Title	Theatr for Social Change

Catalog Description

A survey of theatrical productions in their historical contexts. We will also explore ways in which theatre engages perceptions, behaviors, and social conditions in audiences and practitioners. No previous theatre experience is required.

Prerequisites

None

Field Trip Statement

None

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

Required for Majors	No
Elective for Majors	No

Justification for new course:

This class is to replace Theatre 1190: Theatre via Video. Theatre via Video no longer properly represents the curriculum needed for an introductory theatre class and we

In Workflow

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

Approval Path

1. 04/14/20 10:40 am
   Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 04/24/20 9:18 am
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 10:15 am
   Petra Dewitt (dewittp): Approved for Arts

feel Theatre 1001: Theatre for Social Change would better reflect what to expect from an introductory theatre course on this campus.

& Humanities
DSCC Chair

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 4701

Preview Bridge

Program Change Request

Date Submitted: 04/05/20 4:44 pm

Viewing: AI-CT : AI, Mach Lrn & Auto for Bus CT

File: 292.2

Last approved: 06/12/19 9:58 am

Last edit: 04/05/20 4:44 pm

Changes proposed by: cecq8z

Catalog Pages Using this Program
Information Science and Technology

Start Term
Fall **2020** ~~2019~~
Program Code
AI-CT
Department
Business and Information Technology
Title
AI, Mach Lrn & Auto for Bus CT

Program Requirements and Description

In Workflow

1. **RINFSCTE Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 04/20/20 9:09 pm siauk: Approved for RINFSCTE Chair
2. 04/24/20 8:37 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 8:37 am Kristy Giacomelli-Feys (kristyg): Approved for Social Sciences DSCC Chair

History

1. Jun 12, 2019 by Brittany Parnell (ershenb)

AI, Machine Learning and Automation in Business

Artificial Intelligence is a disruptive technology in the business realm with transformational impact. From detecting malware and preventing money laundering to automating insurance claims and optimizing inventory and improving product recommendations and more, AI will continue to necessitate changes in core business processes and models. Within the past few years, machine learning, while not fully tapped in the business sphere, has become more effective and widely utilized. Tomorrow's leaders and managers will need to integrate machine learning where appropriate, incorporating its capabilities with those of humans. The design and implementation of new combinations of technologies with human skills to meet customers' needs will require critical thinking skills, creativity, and project planning.

A student admitted to this graduate certificate must complete four courses:

Required Courses:

BUS 5730 Machine Learning and Artificial Intelligence for Business

IS&T 5535 Machine Learning Algorithms and Applications

Elective Courses (choose two):

BUS 6723 Artificial Intelligence, Robotics, and Information Systems

IS&T 5520 Data Science and Machine Learning with Python

IS&T 6443 Information Retrieval and Analysis

IS&T 6445 Database Marketing

IST 6450: Information Visualization

ERP 5410: Use of Business Intelligence

~~BUS 5730~~	~~Machine Learning and Artificial Intelligence for Business~~
~~IS&T 5535~~	~~Machine Learning Algorithms and Applications~~
~~And two of the following:~~	
~~BUS 6723~~	~~Artificial Intelligence, Robotics, and Information Systems Management~~
~~IS&T 5520~~	~~Data Science and Machine Learning with Python~~
~~IS&T 6443~~	~~Information Retrieval and Analysis~~
~~IS&T 6445~~	~~Database Marketing~~

Justification for request

The increase in the basket of elective courses gives students greater flexibility and ability to complete the certificate. At the moment, students entering in the fall have difficulty completing the certificate, because most courses are offered in the Spring.

Supporting Documents

Course Reviewer Comments

Key: 292

Program Change Request

Date Submitted: 04/04/20 1:19 pm

Viewing: AP MATH-BS : Applied Mathematics BS

File: 142.45

Last approved: 06/14/19 2:13 pm

Last edit: 04/17/20 2:42 pm

Changes proposed by: prunnion

Catalog Pages Using this Program
Mathematics

Start Term
Fall **2020** ~~2019~~
Program Code
AP MATH-BS
Department
Mathematics & Statistics
Title
Applied Mathematics BS

Program Requirements and Description

In Workflow

1. **RMATHEMA 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. Kristy Giacomelli-Feys

Approval Path

1. 04/04/20 1:39 pm vsam: Approved for RMATHEMA Chair
2. 04/06/20 4:38 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/17/20 2:43 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair

History

1. Apr 28, 2014 by Ilene Morgan (imorgan)
2. Apr 28, 2014 by Lahne Black (lahne)
3. Jun 13, 2014 by pantaleoa
4. Jun 13, 2014 by pantaleoa

5. Jul 21, 2015 by pantaleoa
6. Jul 21, 2015 by pantaleoa
7. Apr 25, 2016 by Ilene Morgan (imorgan)
8. Aug 12, 2016 by cladmin-bdietzler
9. Jun 14, 2019 by Paul Runnion (prunnion)

Bachelor of Science
Applied Mathematics

A minimum of 128 credit hours is required for a bachelor of science degree in applied mathematics. A minimum grade of "C" is required by the department in each course counted toward the math/stat requirement for the B.S. in applied mathematics. Moreover, the department requires that an average of at least two grade points per credit hour must be obtained for all courses taken within the department. These requirements for the B.S. degree are in addition to credit received for algebra, trigonometry, and basic ROTC.

The applied mathematics curriculum requires fifteen semester hours of technical electives, except where this requirement is reduced to compensate for extra requirements of emphasis areas, in addition to basic courses in chemistry or biology, physics, computer science, and economics. Two semesters of language and communication, ENGLISH 1160 or ENGLISH 3560, and either HISTORY 1300, HISTORY 1310, HISTORY 1200, or POL SCI 1200 are also required. Specific requirements for the bachelor's degree are outlined in the sample program below.

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MATH 1101	1	MATH 1215 or 1221[1]	4
MATH 1208 or 1214[1]	4	Science Requirement[5]	5
CHEM 1100	1	~~COMP SCI 1570~~	~~3~~
ENGLISH 1120	3	~~COMP SCI 1580~~	~~1~~
Campus History Requirement[2]	3	**COMP SCI 1500**	**3**
Language and Communication Requirement[3]	3	Language and Communication Requirement[3]	3
Basic ROTC (if elected)[4]	0	Basic ROTC (if elected)[4]	0
	15		15
Sophomore Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MATH 2222[1]	4	MATH 3304[1]	3
MATH 3108[1]	3	MATH 3109[1]	3
~~Statistics Requirement~~[1,6,7]	~~3~~	**Statistics Requirement**[1,6,7]	**3**
COMP SCI 1570	**3**	ECON 1100 or 1200	3
COMP SCI 1580	**1**	PHYSICS 2135	4

PHYSICS 1135	4	~~COMP SCI 1575 or 3200~~[7]	~~3~~
ENGLISH 1160[8]	3	Basic ROTC (if elected)[4]	0
Basic ROTC (if elected)[4]	0		
	18		16

Junior Year

First Semester	Credits	Second Semester	Credits
MATH 4209[1]	3	MATH 4211[1]	3
Literature	3	Literature	3
Electives-Math or Stat[1,7,9]	3	Electives-Math or Stat[1,7,9]	3
Electives-Technical[10]	3	Electives-Technical[10]	3
Electives	3	Electives	3
	15		15

Senior Year

First Semester	Credits	Second Semester	Credits
Capstone Course[1,7,11]	3	Electives-Math or Stat[1,7,9]	3
Electives-Math or Stat[1,7,9]	3	Electives-Technical[10]	3
Electives-Technical[10]	6	Electives	10
Electives	6		
	18		16
Total Credits: 128			

1. A minimum grade of "C" is required by the department in each course counted toward the math/stat requirement for the B.S. in applied mathematics. Moreover, the department requires that an average of at least two grade points per credit hour must be obtained for all courses taken within the department.
2. May be met by HISTORY 1200, HISTORY 1300, HISTORY 1310, or POL SCI 1200.
3. This requirement will be satisfied by either (1) six credits of Speech and Media Studies course work; or (2) a modern language approved by the advisor with competency at the level of second semester college/university course work or, with approval of the department, by completion of Level III of a foreign language in high school.
4. Basic ROTC may be elected in the freshman and sophomore years, but is not creditable toward a degree. Up to six credit hours of advanced ROTC may be credited as free electives towards a degree.
5. May be met by CHEM 1310 and CHEM 1319 or by BIO SCI 1113 and BIO SCI 1219.
6. May be met by STAT 3113, STAT 3115, or STAT 3117.
7. No course may be used to satisfy more than one degree requirement, except as otherwise noted.
8. May also be satisfied by ENGLISH 3560.
9. The student must choose two from the following five groups and then complete six hours in each of the chosen groups
    1. MATH 5105, MATH 5106, MATH 5107, MATH 5108
    2. MATH 5105, MATH 5215, MATH 4530 orMATH 5530, MATH 5351, MATH 5585
    3. MATH 5222,MATH 5302, MATH 5325,MATH 5351, MATH 5483, MATH 5603, MATH 5604
    4. STAT 5814, STAT 5643, STAT 5644, STAT 5346, STAT 5353, STAT 5755, STAT 5756
    5. COMP SCI 3200, COMP SCI 5201, COMP SCI 5202, MATH 5603, MATH 5604, MATH 5737, STAT 5260, STAT 5346, STAT 5755, STAT 5756, STAT 5814.
10. Courses in biology, chemistry, computer science, economics, engineering, geology, mechanics, or physics approved by advisor. The general math curriculum requires 15 credit hours; actuarial science emphasis area, 12 credit hours; algebra/discrete math

	emphasis area, 15 credit hours; computational math emphasis area, 9 credit hours; statistics emphasis area, 12 credit hours.
11	The capstone experience for all applied mathematics majors (other than students completing the secondary education emphasis area) consists of a course chosen from the following list: MATH 4098 (three credits), MATH 4099 or STAT 4099 (three credits), MATH 5107, MATH 5215, MATH 5603, STAT 5346, STAT 5353, STAT 5755, or STAT 5756.

Emphasis Areas at the Bachelor of Science Level

Note: It is not required that students complete an emphasis area to obtain the bachelor of science degree in applied mathematics. The emphasis area requirements often specify most, if not all, of the electives in mathematics, statistics and computer science as well as many technical or free electives.

Actuarial Science Emphasis Area

Required courses:

STAT 5643	Probability And Statistics	3
STAT 5644	Mathematical Statistics	3
ECON 1100	Principles Of Microeconomics	3
ECON 1200	Principles Of Macroeconomics	3
ECON 2200	Intermediate Macroeconomic Theory	3
MATH 5737	Financial Mathematics	3
And six hours from:		6
STAT 5814	Applied Time Series Analysis	3
STAT 5346	Regression Analysis	3
STAT 5353	Statistical Data Analysis	3
STAT 5755	Statistical Models in Actuarial Science	3
STAT 5756	Statistical Models for Life Contingencies	3

In addition, the student must pass the first actuarial science exam. Note that the capstone requirement is included in, not separate from, this list of courses.
When selecting a 3000-level statistics course to satisfy the major requirements, it is recommended that students pursuing an Actuarial Science emphasis select Stat 3117.

Algebra/Discrete Mathematics Emphasis Area

Required courses:

MATH 5105	Modern Algebra I	3
MATH 5106	Modern Algebra II	3
or MATH 6105	Finite Fields And Applications	
MATH 5107	Combinatorics And Graph Theory (Satisfies Capstone requirement)	3
MATH 5108	Linear Algebra II	3
STAT 5643	Probability And Statistics	3
Select one of the following:		3
STAT 5644	Mathematical Statistics	3
COMP SCI 2200	Theory of Computer Science	3

COMP SCI 3200	Introduction To Numerical Methods	3
COMP SCI 5200	Analysis Of Algorithms	3

Computational Mathematics Emphasis Area

Required courses:

STAT 5353	Statistical Data Analysis (Satisfies Capstone requirement)	3
STAT 5346	Regression Analysis	3
COMP SCI 1575	**Data Structures**	**3**
COMP SCI 3200	Introduction To Numerical Methods	3
Select three of the following:		
MATH 5302	Intermediate Differential Equations	3
MATH 5325	Partial Differential Equations	3
MATH 5603	Methods of Applied Mathematics	3
MATH 5604	Introduction to Numerical Methods for Differential Equations	3
Select one of the following:		3
COMP SCI 5201	Object-Oriented Numerical Modeling I	3
COMP SCI 5402	Introduction to Data Mining	3
MECH ENG 5139	Computational Fluid Dynamics	3
AERO ENG 5139	Computational Fluid Dynamics	3
MECH ENG 5212	Introduction to Finite Element Analysis	3
AERO ENG 5212	Introduction to Finite Element Analysis	3
MECH ENG 5830	Applied Computational Methods	3
AERO ENG 5830	Applied Computational Methods	3

Applied Analysis Emphasis Area

Required:

COMP SCI 3200	Introduction To Numerical Methods	3
and two of groups 3, 4, and 5 under Mathematics and Statistics electives (plus the Capstone requirement) must be satisfied,		
and choose Technical Electives and Free Electives to satisfy one of the following two options:		

Engineering Option

Required courses:

CIV ENG 2200	Statics	3
CIV ENG 2210	Mechanics Of Materials	3
Select one of the following:		
MECH ENG 2350	Engineering Mechanics-Dynamics	
MECH ENG 2360	Dynamics	3
Select three of the following:		9
Courses, which have any of the listed courses as prerequisites, may also be used to fulfill this requirement.		

AERO ENG 3613	Aerospace Mechanics I	3
AERO ENG 5313	Intermediate Dynamics of Mechanical and Aerospace Systems	3
AERO ENG 5614	Spaceflight Mechanics	3
CHEM ENG 2100	Chemical Engineering Material & Energy Balances	4
CHEM ENG 2110	Chemical Engineering Thermodynamics I	3
ELEC ENG 2800	Electrical Circuits	3
MECH ENG 3313	Machine Dynamics	3
MECH ENG 2519	Thermodynamics	3
or MECH ENG 2527	Thermal Analysis	
MECH ENG 5131	Intermediate Thermofluid Mechanics *	3
NUC ENG 3103	Interactions Of Radiation With Matter	3
NUC ENG 4203	Reactor Physics I	3
PET ENG 4621	Fundamentals Of Petroleum Reservoir Simulation	3
CIV ENG 3330	Engineering Fluid Mechanics	3
or NUC ENG 3221	Reactor Fluid Mechanics	
or MECH ENG 3131	Thermofluid Mechanics I	
CIV ENG 5207	Computer Methods of Structural Analysis	3
CIV ENG 5333	Intermediate Hydraulic Engineering	3
ELEC ENG 5370	Introduction to Neural Networks and Applications	3
MECH ENG 5307	Vibrations I	3
MECH ENG 5211	Introduction To Continuum Mechanics	3
MECH ENG 5234	Stability of Engineering Structures *	3
MECH ENG 5254	Variational Formulations Of Mechanics Problems	3
GEO ENG 4115	Statistical Methods in Geology and Engineering	3
GEOPHYS 3221	Potential Field Theory	3

* Courses with an asterisk (*) are co-listed in more than one department.

Physics Option

Required courses:

PHYSICS 2311	Modern Physics I	3
PHYSICS 3311	Modern Physics II	3
And take at least nine additional hours of physics courses at the 2000 level or above.		9

Note that the requirements for a minor in physics will be satisfied with this option.

Secondary Education Emphasis Area

You may earn a B.S. degree in applied mathematics from Missouri S&T and certification to teach at the secondary level in the schools of Missouri with this emphasis area program. This program can be completed in four academic years.

Students interested in this emphasis area should consult with the advisor for mathematics education majors in the mathematics and statistics department.

In order to successfully complete this emphasis area, students must maintain a cumulative GPA of at least 2.75 and attain at least a 3.0 GPA in all mathematics, statistics, and education courses. Current Missouri S&T or transfer students who wish to pursue this emphasis area must meet these GPA requirements to be accepted into the program. Students must also meet all requirements listed under teacher education in the catalog. Students who do not meet all the teacher certification requirements will not be eligible for the secondary education emphasis area, even if they have completed all coursework.

A degree in this emphasis area requires 128 credit hours. The required courses and a sample four-year program are provided below. (A minimum grade of "C" is required by the department in all mathematics and statistics courses counted toward this degree. No course may be used to satisfy more than one degree requirement, except as otherwise noted.)

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MATH 1101	1	MATH 1215 or 1221	4
MATH 1208 or 1214	4	BIO SCI 1113	3
CHEM 1100	1	BIO SCI 1219 (Science Lab Requirement)[1]	2
ENGLISH 1120	3	PSYCH 1101	3
HISTORY 1300 or 1310	3	EDUC 1164	2
EDUC 1040	2	EDUC 1174	2
EDUC 1104	2		
	16		16
Sophomore Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MATH 2222	4	MATH 3304	3
MATH 3108	3	MATH 3109	3
COMP SCI 1500	**3**	ENGLISH 1160	3
PHYSICS 1135	4	PHYSICS 2135	4
~~COMP SCI 1570, or 1970 ***and*** 1980, or 1971 ***and*** 1981, or 1972 ***and*** 1982~~[5]	~~3~~	PSYCH 3310	3
SP&M S 1185	3		
	17		16
Junior Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MATH 4209	3	MATH 4211	3
STAT 3113, or 3115, or 3117	3	MATH 4530	3
ECON 1100 or 1200	3	EDUC 3280	6
ENGLISH 3170	3	Fine Art Elective[2]	3
EDUC 3216	3	PSYCH 2300 or EDUC 2102	3
	15		18
Senior Year			
First Semester	**Credits**	**Second Semester**	**Credits**
Electives-Math or Stat[4]	6	EDUC 4298 & EDUC 4299[3]	13

PSYCH 4310 or EDUC 4310	3	
POL SCI 1200	3	
Literature	3	
Electives	2	
	17	13
Total Credits: 128		

1	May be met by BIO SCI 1219 or CHEM 1319, but if CHEM 1319 is used, one extra hour must be attained in any elective area to fulfill the 128 total hour requirement.
2	Any three-hour course from the areas of foreign language, music, theater, philosophy or art.
3	Student Teaching satisfies the capstone requirement for students completing this emphasis area.
4	Any two three-hour courses from the following list with the approval of the mathematics education advisor. MATH 5105, MATH 5106, MATH 5107, MATH 5108, MATH 5215, MATH 5222, MATH 5302, MATH 5325, MATH 5351, MATH 5483, MATH 5585, STAT 5643, STAT 5644, STAT 5346, STAT 5353, COMP SCI 3200, COMP SCI 5201, COMP SCI 5202, MATH 5737.
5	COMP SCI 1570 if not transferred in will require COMP SCI 1580, requiring one extra credit hour which will count either towards technical electives or free electives.

Statistics Emphasis Area

Required courses:

STAT 5643	Probability And Statistics	3
STAT 5644	Mathematical Statistics	3
STAT 5346	Regression Analysis	3
STAT 5353	Statistical Data Analysis (Satisfies Capstone requirement)	3
Select two of the following:		6
BIO SCI 2223	General Genetics	3
COMP SCI 3200	Introduction To Numerical Methods	3
COMP SCI 5402	Introduction to Data Mining	3
STAT 5260	Statistical Data Analysis Using SAS	3
STAT 5814	Applied Time Series Analysis	3
And complete either A or B:		6
(A) Complete the following 2 courses:		
MATH 5215	Introduction To Real Analysis	3
MATH 5351	Introduction To Complex Variables	3
(B) Complete 6 hours from:		
MATH 5107	Combinatorics And Graph Theory	3
MATH 5108	Linear Algebra II	3
MATH 5603	Methods of Applied Mathematics	3

Justification for request

These proposed changes address the changes to the introductory offerings in the Computer Science department and, in doing so, remove a hidden prerequisite. While most math majors will no longer be required to take CS 1575 (Data Structures), students pursuing a computational mathematics emphasis should still take data structures and, thus, it has been added to the computational math emphasis with a corresponding reduction in the free electives required for students in that emphasis.
CS 1500 is already on the approved list with DESE for the secondary ed emphasis, so the change to the secondary ed emphasis won't have any impact on the ability of our students to obtain their teacher certifications.
Supporting Documents
Course Reviewer Comments
shannonk (04/17/20 2:42 pm): added justification statement from Paul Runnion Also removed Physics 1111, 2111, 1119, and 2119 since these courses are no longer offered.

Key: 142

Program Change Request

Date Submitted: 03/09/20 4:00 pm

Viewing: AP MATH-MS : Applied Mathematics MS

File: 7.14

Last approved: 06/27/16 9:25 am

Last edit: 03/23/20 9:25 am

Changes proposed by: prunnion

Catalog Pages Using this Program
Mathematics and Statistics

Start Term
08/15/2016
Program Code
AP MATH-MS
Department
Mathematics & Statistics
Title
Applied Mathematics MS

Program Requirements and Description

In Workflow

1. **RMATHEMA 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. Kristy Giacomelli-Feys

Approval Path

1. 03/13/20 2:46 pm vsam: Approved for RMATHEMA Chair
2. 03/23/20 9:25 am Kristy Giacomelli-Feys (kristyg): Rollback to RMATHEMA Chair for CCC Secretary
3. 04/04/20 1:39 pm vsam: Approved for RMATHEMA Chair
4. 04/06/20 4:38 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
5. 04/17/20 1:58 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair

History

1. Sep 12, 2013 by pantaleoa
2. Mar 6, 2014 by Ilene Morgan (imorgan)
3. Jul 23, 2014 by Ilene Morgan (imorgan)
4. Jul 23, 2015 by pantaleoa
5. Jun 27, 2016 by Ilene Morgan (imorgan)

The program for the M.S. **in Applied Mathematics** ~~degree~~ without a thesis must include at least **30** ~~33~~ hours of graduate credit, **with** ~~nine hours of which must be lecture courses at~~ the **following additional specifications:** ~~6000-level.~~

- **At least 18 hours** ~~degree with thesis, the program~~ **must come from Mathematics & Statistics Department** ~~include at least 30 hours of graduate credit, at least six hours of which must be~~ **lecture courses at the 5000-level** ~~6000-level and six~~ **or higher.** ~~more hours of which must be Graduate Research, MATH 6099 or STAT 6099.~~
- **At least 6 of the 18 hours must come from Mathematics & Statistics Department lecture courses at the 6000-level.**
- **A minimum of 3 additional hours must come from 6000-level lecture courses.**

The program for ~~For~~ the M.S. **in Applied Mathematics with a thesis must include at least 30 hours of graduate credit, with the following additional specifications:**

- **At least 12 hours must come from Mathematics & Statistics Department lecture courses at the 5000-level or higher.**
- **At least 6 of the 12 hours must come from Mathematics & Statistics Department lecture courses at the 6000-level.**
- **At least 6 hours of Graduate Research (MATH 5099, MATH 6099, STAT 5099, or STAT 6099) must be completed.**
- ~~degree with thesis, the program must include at least 30 hours of graduate credit, at least six hours of which must be lecture courses at the 6000-level and six or more hours of which must be Graduate Research, MATH 6099 or STAT 6099.~~ Candidates ~~in a thesis program~~ must pass an oral thesis defense.

All M.S. candidates are encouraged to include in their program courses in engineering **or** ~~and~~ science **that** ~~which~~ are closely related to their **interests. For those intending to terminate study at the M.S.** ~~research in mathematics or statistics. For those intending to terminate study at theM.S.~~level, specializations supporting specific career goals are possible.

Justification for request

We are proposing these changes to increase the specificity of our requirements for the MS degree. In addition, we wanted to include the 18 hour requirement in the discipline specifically because no such requirement was stated in our existing degree although, via advising, it was the general norm. We also reduced the number of hours for the non-thesis MS to meet the campus minimum of 30, which our MS with thesis already did.

Note: In the old catalog, the "discipline" field was blank and CourseLeaf would not let me submit this without including a discipline. Since our MS program covers both mathematics and statistics, we would prefer either having this field blank as before or having it include both mathematics and statistics if possible.

Supporting Documents

Course Reviewer Comments

kristyg (03/23/20 9:25 am): Rollback: At this time I won't be able to exclude it or be inclusive of both. If this affects both, you will need to submit both. Also, are you wanting the requirement term of FS 2020? you will need to change it from the 2016 that you submitted. --Kristy

Key: 7

Program Change Request

Date Submitted: 04/17/20 11:01 am

Viewing: AUTOEN-CTU : Undergraduate Certificate in Automation Engineering

File: 254.8

Last approved: 06/12/19 10:25 am

Last edit: 04/24/20 9:29 am

Changes proposed by: kte

Catalog Pages Using this Program
Electrical Engineering

Start Term
Fall **2020** ~~2019~~
Program Code
AUTOEN-CTU
Department
Electrical and Computer Engineering
Title
Undergraduate Certificate in Automation Engineering

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 04/19/20 8:02 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 04/24/20 9:18 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 12:13 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Jun 18, 2018 by Kelvin Erickson (kte)
2. Jul 26, 2018 by Brittany Parnell (ershenb)
3. Jul 26, 2018 by Brittany Parnell (ershenb)

4. Jul 26, 2018 by Brittany Parnell (ershenb)
5. Jun 12, 2019 by Brittany Parnell (ershenb)

Automation Engineering Certificate

An undergraduate certificate in Automation Engineering will require the following:

Required courses:		
ELEC ENG 3340	Basic Programmable Logic Controllers (must pass with a "C" or better)	3
Pass one of the following courses with a "C" or better:		
ELEC ENG 3320	Control Systems	3
MECH ENG 4479	Automatic Control Of Dynamic Systems	3
CHEM ENG 4110	Chemical Engineering Process Dynamics And Control	3
Pass 6 additional hours of coursework from the following list: (A "C" or better is required for all 6 hours)		
~~CHEM ENG 5370~~	~~Course CHEM ENG 5370 Not Found~~	
CHEM ENG 4140	**Chemical Process Safety**	**3**
CHEM ENG 4241	**Process Safety in the Chemical and Biochemical Industries**	**3**
CHEM ENG 4310	Interdisciplinary Problems In Manufacturing Automation	3
or MECH ENG 5644	Interdisciplinary Problems In Manufacturing Automation	
CHEM ENG 5190	Plantwide Process Control	3
or ELEC ENG 5350	Plantwide Process Control	
ELEC ENG 4380	Practicum in Automation Engineering (no more than one can be applied to the Automation Engineering Minor)	3
ELEC ENG 5340	Advanced PLC	3
ELEC ENG 5345	PLC Motion Control	3
ELEC ENG 5870	Mechatronics	3
or MECH ENG 5478	Mechatronics	
MECH ENG 5420	**Signal Processing for Instrumentation and Control**	**3**
MECH ENG 5449	Robotic Manipulators and Mechanisms	3
MECH ENG 5655	Manufacturing Equipment Automation	3

Justification for request

In the list of additional courses, deleted CHEM ENG 5370, which is no longer offered. Added CHEM ENG 4140 and CHEM ENG 4241 which cover safety and are relevant to automation engineering. Added MECH ENG 5420 which is also relevant to automation engineering.

Supporting Documents

Course Reviewer Comments

sraper (04/24/20 9:29 am): Changed effective date to Fall 2020

Key: 254

Program Change Request

Date Submitted: 04/17/20 10:58 am

Viewing: AUTOENG-MI : Minor in Automation Engineering

File: 230.16

Last approved: 04/18/18 8:58 am

Last edit: 04/24/20 9:31 am

Changes proposed by: kte

Catalog Pages Using this Program
Electrical Engineering

Start Term
Fall **2020** ~~2018~~
Program Code
AUTOENG-MI
Department
Electrical and Computer Engineering
Title
Minor in Automation Engineering

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 04/19/20 8:02 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 04/24/20 9:18 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 12:13 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Apr 28, 2014 by Kelvin Erickson (kte)
2. May 7, 2014 by Lahne Black (lahne)
3. Jul 20, 2015 by pantaleoa
4. Feb 27, 2018 by Kelvin Erickson

(kte)
5. Apr 18, 2018 by Brittany Parnell (ershenb)

Minor in Automation Engineering

A minor in automation engineering will require the following:

- Pass ELEC ENG 3340 Basic Programmable Logic Controllers with a "C" or better
- Pass one of the following courses with a "C" or better:
    - ELEC ENG 3320 Control Systems
    - MECH ENG 4479 Automatic Control Of Dynamic Systems
    - CHEM ENG 4110 Chemical Engineering Process Dynamics And Control

- Pass 9 additional hours of coursework from the following list. A "C" or better is required for all 9 hours.
    - **CHEM ENG 4140 Chemical Process Safety**
    - **CHEM ENG 4241 Process Safety in Chemical & Biochemical Industries**
    - ~~CHEM ENG 5370~~ ~~Course CHEM ENG 5370 Not Found~~ CHEM ENG 5190/ELEC ENG 5350 Plantwide Process Control
    - CHEM ENG 4310/MECH ENG 5644 Interdisciplinary Problems In Manufacturing Automation
    - ELEC ENG 4380 Practicum in Automation Engineering (no more than one can be applied to the Automation Engineering Minor)
    - ELEC ENG 5340 Advanced PLC
    - ELEC ENG 5345 PLC Motion Control
    - ELEC ENG 5870/MECH ENG 5478 Mechatronics
    - **MECH ENG 5420 Signal Processing for Instrumentation and Control**
    - MECH ENG 5449 Robotic Manipulators and Mechanisms
    - MECH ENG 5655 Manufacturing Equipment Automation

Justification for request
In the list of additional courses, deleted CHEM ENG 5370, which is no longer offered. Added CHEM ENG 4140 and CHEM ENG 4241 which cover safety and are relevant to automation engineering. Added MECH ENG 5420 which is also relevant to automation engineering.
Supporting Documents
Course Reviewer Comments
sraper (04/24/20 9:31 am): changed effective date to fall 2020

Key: 230

Program Change Request

Date Submitted: 03/10/20 2:41 pm

Viewing: BIO SC-BA : Biological Sciences BA

File: 146.25

Last approved: 06/18/18 12:28 pm

Last edit: 03/10/20 2:41 pm

Changes proposed by: shannonk

Catalog Pages Using this Program
Biological Sciences

Start Term
Fall **2020** ~~2018~~
Program Code
BIO SC-BA
Department
Biological Sciences
Title
Biological Sciences BA

Program Requirements and Description

In Workflow

1. **RBIOLSCI Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 03/10/20 3:33 pm David Duvernell (duvernelld): Approved for RBIOLSCI Chair
2. 03/10/20 3:48 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/03/20 12:52 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair

History

1. Aug 1, 2014 by Katie Shannon (shannonk)
2. Jul 14, 2015 by pantaleoa
3. Oct 7, 2016 by Katie Shannon (shannonk)

4. Jun 28, 2017 by Katie Shannon (shannonk)
5. Nov 14, 2017 by Katie Shannon (shannonk)
6. Jun 18, 2018 by Katie Shannon (shannonk)

Bachelor of Arts
Biological Sciences
Degree Requirements

Specific requirements for the B.A. degree in biological sciences include a minimum of 120 semester hours of credit, including 30 hours of biology core courses. A "C" or better is required for all Biological Science courses.

Core Courses		
BIO SCI 1201	Biological Sciences Freshman Seminar	1
BIO SCI 1113	General Biology	3
or BIO SCI 1213	Principles of Biology	
BIO SCI 1219	General Biology Lab	2
BIO SCI 1223	Biodiversity	3
BIO SCI 1229	Biodiversity Lab	1
BIO SCI 2213	Cell Biology	3
BIO SCI 2219	Cell Biology Laboratory	1
BIO SCI 2223	General Genetics	3
BIO SCI 2263	Ecology	3
BIO SCI 3233	Evolution	3
BIO SCI 4010	Seminar	1
Advanced courses, 2000 level or higher (at least one with laboratory and one 3000 or 4000 level)		9
Chemistry		
CHEM 1310 & CHEM 1319 & CHEM 1320 & CHEM 1100	General Chemistry I and General Chemistry Laboratory and General Chemistry II and Introduction To Laboratory Safety & Hazardous Materials	9
CHEM 2210 & CHEM 2220	Organic Chemistry I and Organic Chemistry II	6
Mathematics & Physical Science		
Various courses in mathematics, physics, and/or geology chosen in consultation with academic advisor. (Note: Proficiency in College Algebra must be demonstrated by a grade of "C" or better in a College Algebra course or by examination)		9
Computer Science/Statistics (Select one of the following:)		3-4

COMP SCI 1570 & COMP SCI 1580	Introduction To C++ Programming and Introduction To Programming Laboratory	
or COMP SCI 1971 & COMP SCI 1981	Introduction To Programming Methodology and Programming Methodology Laboratory	
STAT 3111	Statistical Tools For Decision Making	
~~STAT 5425~~	~~Course STAT 5425 Not Found~~	
STAT 3425	**Introduction to Biostatistics**	**4**
General Requirements for BA		
English Composition		6
ENGLISH 1120	Exposition And Argumentation	
One additional composition course		
Western Civilizations		6
HISTORY 1100	Early Western Civilization	
HISTORY 1200	Modern Western Civilization	
Foreign Language (three semesters of a foreign language)		12
Humanities (including one class in each of literature, philosophy, and fine arts)		12
Social Sciences (including classes in two of the following three subjects: economics, political science, psychology)		12

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

Bachelor of Arts
Biological Sciences
Pre-Medicine Emphasis Area
Degree Requirements

The student will fulfill the requirements for a bachelor of arts in biological sciences as outlined above. The following classes are also required:

CHEM 2219 & CHEM 2229	Organic Chemistry I Lab and Organic Chemistry II Lab	2
2 semesters of Physics and labs:		8-10
PHYSICS 1145	College Physics I	
or PHYSICS 1135	Engineering Physics I	
PHYSICS 2145	College Physics II	
or PHYSICS 2135	Engineering Physics II	

The following classes are highly recommended:

BIO SCI 3333	Human Anatomy and Physiology I	3
BIO SCI 3339	Human Anatomy Physiology I Lab	1
BIO SCI 3343	Human Anatomy and Physiology II	3
BIO SCI 3349	Human Anatomy and Physiology II Laboratory	1
CHEM 4610	General Biochemistry	3

Bachelor of Arts
Biological Sciences
Secondary Education Emphasis Area
Degree Requirements

You may earn a B.A. degree in biological sciences from Missouri S&T and certification to teach at the secondary level in the schools of Missouri with this emphasis area. This program can be completed in four academic years, and student teaching is arranged with public schools within 30 miles of the Rolla campus.

Students interested in this emphasis area should consult with the advisor for biological sciences education majors in the biological sciences department.

In order to successfully complete this emphasis area, students must maintain a cumulative GPA of at least 2.75, and attain at least a 3.0 GPA average for all biology courses and professional education courses. Current Missouri S&T or transfer students who wish to pursue this emphasis area must meet both these GPA requirements to be accepted into the program. Students must also meet all requirements listed under the teacher education program in this catalog. Students who do not meet all the teacher certification requirements will not be eligible for the secondary education emphasis area, even if they have completed all required course work.

A degree in this emphasis area requires 131 credit hours. The required courses are provided below. A minimum grade of “C” is required by the department in all biological sciences courses counted toward this degree.

Humanities: 18 semester hours		
ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 1160	Writing And Research	3
or ENGLISH 3560	Technical Writing	
SP&M S 1185	Principles Of Speech	3
At least one course in each of the following: Literature, Philosophy and Fine Arts		9
Social Sciences: 15 semester hours		
HISTORY 3530	History of Science	3
HISTORY 1100	Early Western Civilization	3
HISTORY 1200	Modern Western Civilization	3
POL SCI 1200	American Government	3
PSYCH 1101	General Psychology	3
Mathematics/Physical Science: 9 semester hours		
MATH 1103	Fundamentals Of Algebra	3
PHYSICS 1145	College Physics I	3
or PHYSICS 1505	Introductory Astronomy	
GEOLOGY 1110	Physical And Environmental Geology	3
Computer Science/Statistics: 3 semester hours		
3 semester hours of Computer Science or Statistics		3
Chemistry: 17 semester hours		
CHEM 1310	General Chemistry I	9
& CHEM 1319	and General Chemistry Laboratory	
& CHEM 1320	and General Chemistry II	
& CHEM 1100	and Introduction To Laboratory Safety & Hazardous Materials	

CHEM 2210 & CHEM 2220	Organic Chemistry I and Organic Chemistry II	6
Biological Sciences: 27 semester hours		
BIO SCI 1201	Biological Sciences Freshman Seminar	1
BIO SCI 1213	Principles of Biology	3
or BIO SCI 1113	General Biology	
BIO SCI 1219	General Biology Lab	2
BIO SCI 1223 & BIO SCI 1229	Biodiversity and Biodiversity Lab	4
BIO SCI 1173	Introduction to Environmental Sciences	3
BIO SCI 2213 & BIO SCI 2219	Cell Biology and Cell Biology Laboratory	4
BIO SCI 2223	General Genetics	3
BIO SCI 2263	Ecology	3
BIO SCI 3233	Evolution	3
BIO SCI 4010	Seminar	1
Education: 42 semester hours		
EDUC 1040	Perspectives In Education	2
EDUC 1104	Teacher Field Experience I	2
EDUC 1164	Teacher Field Experience II	2
EDUC 1174	School Organization and Administration For Teachers	2
EDUC 3216	Teaching Reading in Content Area	3
EDUC 3280	Teaching Methods and Skills in Content Areas	6
EDUC 4298	Student Teaching Seminar	1
EDUC 4299	Student Teaching	12
ENGLISH 3170	Teaching And Supervising Reading and Writing	3
PSYCH 2300	Educational Psychology	3
PSYCH 3310	Developmental Psychology	3
PSYCH 4310	Psychology Of The Exceptional Child	3

Justification for request

Chemistry reduced Organic I and II lecture to 3 hours from 4

STAT 5425 is now STAT 3425

Physics combined General Physics lab into College Physics, and General Physics is no longer taught

Supporting Documents

Course Reviewer Comments

Key: 146

Program Change Request

Date Submitted: 04/01/20 12:51 pm

Viewing: CH ENG-MS : Chemical Engineering MS

File: 14.13

Last approved: 06/18/18 12:29 pm

Last edit: 04/03/20 3:17 pm

Changes proposed by: luksc

Catalog Pages Using this Program
Chemical & Biochemical Engineering

Start Term
Fall **2020** ~~2018~~
Program Code
CH ENG-MS
Department
Chemical and Biochemical Engineering
Title
Chemical Engineering MS

Program Requirements and Description

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 03/31/20 6:01 pm Joseph Smith (smithjose): Rollback to Initiator
2. 04/01/20 3:01 pm Joseph Smith (smithjose): Approved for RCHEMENG Chair
3. 04/03/20 3:17 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
4. 04/22/20 8:48 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Aug 4, 2014 by pantaleoa
2. Oct 7, 2016 by Daniel Forciniti (forcinit)

3. Feb 28, 2018 by Crystal Wilson (wilsoncry)
4. Jun 18, 2018 by marlene

All students, except for those in their first semester and in their last semester for PhD candidates, need to register for 1 credit hour of CHEM ENG 6015 Lecture Series. Lecture Series can be used for a total of 3 hours towards the students 6000 level requirement.

The master of science thesis program consists of a minimum of 30 semester hours, including 18-24 hours of coursework, in which CHEM ENG 5100, CHEM ENG 5110, **CHEM ENG 5150** and CHEM ENG 5220 are required. In addition, a thesis from research that is equivalent to 6-12 credit hours in the major area must be prepared and defended.

A master of science non-thesis program consists of 30 semester hours of coursework, including CHEM ENG 5100, CHEM ENG 5150, CHEM ENG 5110, CHEM ENG 5220 and a minimum of 24 hours of coursework within the department. The program of study must include nine credit hours of 6000 level courses.

Justification for request

Added ChemEng 5150 to the thesis program for consistency in the two MS options

Supporting Documents

Course Reviewer Comments

smithjose (03/31/20 6:01 pm): Rollback: additional edits based on faculty input

kristyg (04/03/20 3:17 pm): Updated effective date to Fall 2020

Key: 14

Program Change Request

Date Submitted: 03/20/20 11:24 am

Viewing: COGNEUR-MI : Cognitive Neuroscience Minor

File: 23.5

Last approved: 11/02/18 11:29 am

Last edit: 03/20/20 11:24 am

Changes proposed by: burnsde

Catalog Pages Using this Program
Psychology

Start Term
Fall **2020** ~~2019~~
Program Code
COGNEUR-MI
Department
Psychological Science
Title
Cognitive Neuroscience Minor

Program Requirements and Description

In Workflow

1. **RPSYCHOL Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 04/01/20 10:59 am Susan Murray (murray): Approved for RPSYCHOL Chair
2. 04/03/20 3:18 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/23/20 4:32 pm Kristy Giacomelli-Feys (kristyg): Approved for Social Sciences DSCC Chair

History

1. May 7, 2014 by Lahne Black (lahne)
2. Nov 2, 2018 by Susan Murray (murray)

Cognitive Neuroscience Minor

Requirements include:

PSYCH 1101	General Psychology	3
PSYCH 4400	Cognitive Psychology	3
PSYCH 4410	Neuroscience	3
PSYCH 4411	Sensation and Perception	3
and 1 of the following		
PSYCH 3400	Theories Of Learning	3
PSYCH 4501	Abnormal Psychology	3

Justification for request

Fix a typo concerning abnormal as an option for S&P

Supporting Documents

Course Reviewer Comments

Key: 23

Program Change Request

Date Submitted: 04/11/20 4:14 pm

Viewing: GE ENG ~~ENG-MS~~ : Geological Engineering Overview ~~MS~~

File: 165.27

Last approved: 05/17/19 10:00 am

Last edit: 04/11/20 4:14 pm

Changes proposed by: gertschl

Catalog Pages Using this Program
Geological Engineering

Start Term
Fall 2019
Program Code
GE **ENG** ~~ENG-MS~~
Department
Geosciences and Geological and Petroleum Engineering
Title
Geological Engineering **Overview** ~~MS~~

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 04/12/20 7:27 am David Borrok (borrokd): Approved for RGEOSENG Chair
2. 04/13/20 8:35 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:49 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Sep 5, 2014 by pantaleoa
2. Jul 23, 2015 by pantaleoa
3. Jul 23, 2015 by pantaleoa
4. Apr 23, 2016 by pantaleoa

5. Feb 4, 2019 by Brittany Parnell (ershenb)
6. May 17, 2019 by Katherine Grote (grotekr)

~~The department of Geosciences and Geological and Petroleum Engineering is home to three separate programs, geological engineering, geology and geophysics, and petroleumengineering.Geotechnics is a part of the geological engineeringprogram.~~Geological engineering is ~~the~~ application of **principles of geology to the solution of a wide range of problems in engineering practice, such as assessing** ~~the knowledge~~ and **mitigating geologic hazards (subsidence, landslides, flooding, etc.), evaluating and improving groundwater resources, sustainably developing mineral and energy resources, selecting appropriate sites for civil and military infrastructure, and analyzing land use and environmental impacts.** ~~principles of geology to the solution of problems in engineering practice.~~ **The graduate programs available in this multiple-industry field include:**

- **Graduate Certificates**
- **Master of Science / Master of Engineering**
- ~~These applications include the evaluation of geological conditions for natural hazard assessment, environmental protection studies, groundwater resource and pollution investigations, mineral and energy development, site selection of civil works facilities, and land use and environmental impactanalysis.The geological engineering laboratories are well equipped for research relating to physical and hydraulic properties of rock, groundwater hydrology, remote sensing, and geographic informationsystems.Computer applications are emphasized, and the department has a laboratory equipped with a variety of personal computer equipment for studentuse.~~**Doctor of Philosophy / Doctor of Engineering**

Most can be completed wholly or partially through online work. Details of these programs and their requirements are available at the departmental website and ~~A groundwater hydrology laboratory is equipped to conduct research~~ in **associated sections of this catalog. Campus-wide rules** ~~subsurface fluid flow and computer facilities are available~~ for **graduate degrees are repeated here only if modified; check the Graduate Studies section of this catalog for the latest updates. The catalog version in force during the semester of initial enrollment is the baseline for evaluation of graduation readiness.** ~~the modeling of flow through porous media.~~

Geological ~~The geological~~ **engineering faculty conduct research in cooperation with other MS&T departments and research centers, University of Missouri campuses, state and federal agencies, and other universities and research entities worldwide. Our laboratories and research sites are located in Missouri S&T's McNutt Hall, Rock Mechanics facility, and Experimental Mine, as well as the Missouri Department of Natural Resources Bohigian Conservation Area and field sites both domestic and international. Some recent research projects include:** ~~**equipped for research relating to physical and hydraulic properties of rock, groundwater hydrology, remote sensing, and geographic information systems.**~~

- ~~Recent research projects in the GE programinclude:~~Designing **rock and soil** excavating tools for **use** ~~geomaterials~~ on **Earth and** ~~earth and~~ in space.
- Measuring the permeability of soils using satellites, drones and ground-based geophysics.
- Evaluating earthquake hazards along the New Madrid fault.
- Using satellite data to investigate aquifer depletion and land subsidence.
- Studying blasting efficiency for enhancing productivity in the mining industry.
- Predicting water pollution based on geologic and land use factors.
- Developing a rock fall hazard rating system for Missouri highways.
- **Assessing the effect of water saturation on rock fragmentation.**
- Using **LiDAR** ~~LIDAR~~ to research the rock raveling **process on natural and engineered slopes.** ~~process.~~
- Developing a virtual geotechnical database for the greater St. Louis Metropolitan Area.
- Identifying areas suitable for managed aquifer recharge in the U.S. and Iraq.
- ~~Creation of a geologic GIS database for theSt.Louis MetropolitanArea.~~Detection of underground mines and caverns using geophysical methods.

- Using drone data to find the locations to drill wells in fractured rock.
- **Modifying mining methods for use in space.**
- **Designing controlled** ~~Applying mining~~ methods to **reduce** ~~potential space mining applications, and reducing~~ the size of **asteroids** ~~asteroid~~ on ~~potential~~ collision courses with **Earth.** ~~earth.~~
- Developing sustainable **point-of-use** ~~point of use~~ drinking water systems in developing areas.
- Using renewable energy systems to power ~~active~~ groundwater pumping and remediation systems.
- Characterizing the reliability of **renewable** ~~wind and solar~~ energy system prediction models.

~~The department maintains a computer learning center and Geographic Information Systems Laboratory with PCs, and a variety of peripheral devices such as scanners, digitizers, andprinters.ArcGIS, ERDAS, IDRIS, AutoCAD Map and World, and other software packages are available for instruction andresearch.Applications of GIS and Remote Sensing Technology which are stressed include site characterization and selection, geologic hazards mapping, and terrainanalysis.The department also offers graduate certificates in geotechnics, subsurface water resources, water resources, natural hazards, and spacemining.The minimum Graduate Record Examinations (GRE) scores required for acceptance consideration in the Geology and Geophysics graduate program are Q = 148, Q+V = 300, and A(W) =3.0.Contact information, e-mail gee@mst.edu or visit our website at http://gse.mst.edu/.~~

Justification for request

The overview section of the Geological Engineering graduate program needs updating.

Supporting Documents

Course Reviewer Comments

Key: 165

Program Change Request

Date Submitted: 04/11/20 4:14 pm

Viewing: GE ENG-BS : Geological Engineering BS

File: 156.33

Last approved: 03/03/20 1:42 pm

Last edit: 04/11/20 4:14 pm

Changes proposed by: gertschl

Catalog Pages Using this Program
Geological Engineering

Start Term
Fall 2020
Program Code
GE ENG-BS
Department
Geosciences and Geological and Petroleum Engineering
Title
Geological Engineering BS

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 03/15/20 3:55 pm David Borrok (borrokd): Approved for RGEOSENG Chair
2. 03/23/20 9:26 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/01/20 11:33 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
4. 04/10/20 4:26 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
5. 04/12/20 7:27 am David Borrok (borrokd): Approved for RGEOSENG Chair
6. 04/13/20 8:35 am Kristy Giacomelli-Feys (kristyg):

Approved for CCC Secretary
7. 04/22/20 8:49 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Mar 18, 2014 by Lahne Black (lahne)
2. Nov 18, 2014 by pantaleoa
3. Nov 18, 2014 by pantaleoa
4. Jul 20, 2015 by pantaleoa
5. Feb 27, 2018 by Katherine Grote (grotekr)
6. Jun 18, 2018 by Katherine Grote (grotekr)
7. Jun 14, 2019 by Katherine Grote (grotekr)
8. Mar 3, 2020 by Brittany Parnell (ershenb)

Bachelor of Science
Geological Engineering

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

For the bachelor of science degree in geological engineering a minimum of 128 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. **The** ~~A~~ student must maintain at least two grade points per credit hour **(grade of C)** for all courses taken in **geological engineering. Their program of study must contain a minimum of 18 credit hours of course work in** the **humanities** ~~student's major department,~~ and **the social sciences areas, selected as described in the Engineering Degree Requirements section of this catalog. Geological engineering students must take the Fundamentals of Engineering Examination prior to graduation.** ~~an average of at least two grade points per credit hour must be maintained in geological engineering. The geological engineering curriculum contains a required number of hours in humanities and socialsciences.Each student's program of study must contain a minimum of 18 credit hours of course work from the humanities and the social sciences areas and should be chosen according to the followingrules:All students are required to take one American history course and one economicscourse.The history course~~

~~is to be selected from HISTORY 1200, HISTORY 1300, HISTORY 1310, orPOL SCI 1200.The economics course may be either ECON 1100 orECON 1200.Some disciplines require one humanities course to be selected for art, English, foreign languages, music, philosophy, speech and media studies, ortheater.Of the remaining hours, six credit hours must be taken in humanities or social sciences at the 2000 level or above and must meet requirements as specified under "Engineering Degree Requirements" published in the current undergraduatecatalog.Each of these courses must have as a prerequisite one of the humanities or social sciences courses alreadytaken.Foreign language courses numbered 1180 can be considered to be one of thesecourses.(Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 3000 level.)Some departments list specific requirements;e.g.a psychology course, a literature course, and /or a second semester ofeconomics.Selections should be made to ensure that these requirements aremet.Special topics, special problems courses and honors seminars are allowed only by petition to and approval by the student's programhead.The geological engineering program at Missouri S&T is characterized by its focus on the scientific basics of engineering and its innovative application; indeed, the underlying theme of this educational program is the application of the scientific basics to engineering practice through attention to problems and needs of thepublic.The necessary interrelations among the various topics, the engineering disciplines, and the other professions as they naturally come together in the solution of real-world problems are emphasized as research, analysis, synthesis, and design are presented and discussed through classroom and laboratoryinstruction.All GE students must take the Fundamentals of Engineering Examination prior tograduation.~~ A passing grade is not required; however, **passing this examination** ~~it~~ is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process.

The geological engineering program at Missouri S&T is characterized by comprehensive understanding of the scientific basics of engineering and innovative application. We focus on solving the problems and meeting the needs of civilization as those are affected by geological materials, structures, or events. The necessary interactions required for this among the various sciences, engineering disciplines, and human professions are emphasized in research, analysis, synthesis, and design. Learning occurs in classroom, laboratory, online, field, and combined modes. ~~Engineering Geology and GeotechnicsGroundwater Hydrology and Environmental ProtectionDual Professional Registration as a Geologist Environmental and Engineering Geophysics Renewable and Conventional Energy ResourcesQuarry and Mining Engineering Accelerated BS/MS~~

~~GEO ENG 5575~~	~~Aggregates And Quarrying~~	~~3~~
~~MIN ENG 5823~~	~~Rock Mechanics~~	~~3~~
~~CIV ENG 3116~~	~~Construction Materials, Properties And Testing~~	~~3~~
~~GEO ENG 5471~~	~~Rock Engineering~~	~~3~~
~~GEO ENG 4276~~	~~Environmental Aspects Of Mining~~	~~3~~
~~MIN ENG 3913~~	~~Mineral Identification and Exploration~~	~~3~~
~~MIN ENG 5612~~	~~Principles of Explosives Engineering~~	~~3~~
~~MIN ENG 5822~~	~~Strata Control~~	~~3~~

~~GEO ENG 5736~~	~~Geophysical Field Methods~~	~~3~~
~~GEO ENG 5761~~	~~Transportation Applications of Geophysics~~	~~3~~
~~GEO ENG 5782~~	~~Environmental and Engineering Geophysics~~	~~3~~
~~GEO ENG 5144~~	~~Remote Sensing Technology~~	~~3~~
~~GEOPHYS 4241~~	~~Electrical Methods In Geophysics~~	~~3~~
~~GEOPHYS 4261~~	~~Geophysical Instrumentation~~	~~1~~
~~GEOPHYS 5231~~	~~Seismic Data Processing~~	~~3~~

~~GEOLOGY 2096~~	~~Field Geology~~	~~3~~
~~GEOLOGY 3620~~	~~Stratigraphy And Sedimentation~~	~~3~~
~~GEOLOGY 4097~~	~~Advanced Field Geology~~	~~3~~
~~GEOLOGY 4841~~	~~Geological Field Studies~~	~~3~~

~~GEOLOGY 3410~~	~~Introduction To Geochemistry~~	~~3~~
~~GEOLOGY 4310~~	~~Remote Sensing Technology~~	~~3~~
~~GEOLOGY 4431~~	~~Methods Of Karst Hydrogeology~~	~~3~~

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MATH 1214	4	MATH 1215	4
CHEM 1100	1	MECH ENG 1720	3
CHEM 1310	4	PHYSICS 1135	4
CHEM 1319	1	GEO ENG 1150	3
ENGLISH 1120	3	Humanities/Soc Sci Elective[a]	3
FR ENG 1100	1		
Humanities/Soc Sci Elective[a]	3		
	17		17
Sophomore Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MATH 2222	4	MATH 3304	3
PHYSICS 2135	4	CIV ENG 2200	3
GEO ENG 3148	3	GEO ENG 2110	1
GEO ENG 3249	3	GEOLOGY 2611	3
Humanities/Soc Sci Elective[a]	**3**	GEO ENG 3175	3
		Humanities/Soc Sci Elective[a]	3
	17		16
Junior Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MECH ENG 2350	2	CIV ENG 3330	3
CIV ENG 2210	3	~~GEO ENG 5443~~	~~3~~
GEO ENG 5331	3	~~ENGLISH 3560~~	~~3~~
~~Economics Elective[b]~~	~~3~~	~~Humanities/Soc Sci Elective[a]~~	~~3~~
GEOLOGY 3310	3	**CIV ENG 3715 or MIN ENG 5823**	**3**
~~Humanities/Soc Sci Elective[a]~~	~~3~~	**GEO ENG 5174**	**3**
GEOLOGY 3319	1	Chemistry/Geochemistry Elective[b]	3
ECON 1100 or 1200	**3**	**Technical Elective[c]**	**3**
	15		15
Senior Year			
First Semester	**Credits**	**Second Semester**	**Credits**
GEO ENG 4010	0.5	~~GEO ENG 5174~~	~~3~~
GEO ENG 5441	3	GEO ENG 4010	0.5
~~GEO ENG 5090 or 5092[e]~~	~~3~~	**GEO ENG 4115**	**3**

~~CIV ENG 3715 or MIN ENG 5823~~	~~3~~	**GEO ENG 5090**	**3**
~~GEO ENG 4115~~	~~3~~	**Geo Eng Elective**[e]	**3**
GEO ENG 5443	**3**	Eng Econ Elective[f]	3
ENGLISH 3560	**3**	~~Technical Electives~~[~~g~~]	~~6~~
Geophysics Elective[d]	3	~~Eng Econ Elective~~[~~h~~]	~~3~~
Technical Elective[c]	**3**	**Humanities/Soc Sci Elective**[a]	**3**
	15.5		15.5
Total Credits: 128			

a	Humanities/Social Sciences Elective: This course sequence must provide both breadth and depth of content and meet requirements specified in the Engineering Degree Requirements section of the current undergraduate catalog. A total of 18 credit hours is required.
b	Chemistry/Geochemistry Elective: Select from chemistry, geochemistry or biology courses as approved by advisor.
c	Technical Elective: Select from advanced courses in science or engineering as approved by advisor.
d	Geophysics Elective: Select from GEO ENG 5736, GEO ENG 5761, or GEO ENG 5782.
e	Geological Engineering Elective: Select from GEO ENG 5471, GEO ENG 5381, GEO ENG 5556, MIN ENG 5823, PET ENG 2510, PET ENG 3520, CIV ENG 3715, CIV ENG 4729, or CIV ENG 5715.
f	Engineering Economics Elective: Select from ENG MGT 5210, MIN ENG 3512, or PET ENG 4590 or both ENG MGT 1100 and ENG MGT 1210.
~~g~~	~~To be selected from advanced courses in geological, mining, petroleum or civil engineering, geology or other courses with approval of your advisor. Must contain design content and must be approved by your advisor.~~
~~h~~	~~To be selected from ENG MGT 5210, MIN ENG 3512, or PET ENG 4590 or both ENG MGT 1100 and ENG MGT 1210.~~

~~**Geological engineering students must earn the grade of "C" or better in all geological engineering courses to receive credit towardgraduation.The total number of credit hours required for a degree in Geological Engineering is128.The assumption is made that a student admitted to the Department has completed 34 hours toward graduation to fulfill the requirements of the Freshman Engineeringprogram.Geological Engineering Emphasis Areas Electives are selected by the student with advisorapproval.Some appropriate electives are listed for each emphasisarea.~~

Geological Engineering Emphasis Areas

The ~~Program Option for Geological Engineering MajorsGeological Engineering undergraduates at Missouri S&T may opt to apply for an accelerated BS/MS program where a~~ student **uses** ~~can achieve both~~ the **following course lists as guidance to satisfy** ~~BS and MS degrees in Geological Engineering faster than if pursuing~~ the **various elective requirements (chemistry/geochemistry, technical, geophysics, and geological engineering) while focusing preparation for their chosen career specialty. Other courses can** ~~degrees separately. The degrees awarded will~~ be **substituted with advisor approval.** ~~a BS & MS in Geological Engineering.~~

Dual Professional Registration as a Geologist

GEOLOGY 2096	**Field Geology**	**3**
GEOLOGY 3410	**Introduction To Geochemistry**	**3**
GEOLOGY 3620	**Stratigraphy And Sedimentation**	**3**

GEOLOGY 4097	**Advanced Field Geology**	**3**
GEOLOGY 4310	**Remote Sensing Technology**	**3**
or GEO ENG 5144	**Remote Sensing Technology**	
GEOLOGY 4431	**Methods Of Karst Hydrogeology**	**3**
GEOLOGY 4841	**Geological Field Studies**	**3**

Engineering Geology and Geotechnics

GEO ENG 5146	Applications Of Geographic Information Systems	3
~~GEO ENG 5441~~	~~Engineering Geology And Geotechnics~~	~~3~~
GEO ENG 5471	Rock Engineering	3
CIV ENG 3715	Fundamentals of Geotechnical Engineering	3
CIV ENG 4729	Foundation Engineering	3
MIN ENG 5823	Rock Mechanics	3

Environmental and Engineering Geophysics

GEO ENG 5144	**Remote Sensing Technology**	**3**
GEO ENG 5736	**Geophysical Field Methods**	**3**
GEO ENG 5761	**Transportation Applications of Geophysics**	**3**
GEO ENG 5782	**Environmental and Engineering Geophysics**	**3**
GEOPHYS 4241	**Electrical Methods In Geophysics**	**3**
GEOPHYS 4261	**Geophysical Instrumentation**	**1**
GEOPHYS 5231	**Seismic Data Processing**	**3**

Groundwater Hydrology and Environmental Protection

GEO ENG 4276	Environmental Aspects Of Mining	3
GEO ENG 5233	Risk Assessment In Environmental Studies	3
GEO ENG 5235	Environmental Geological Engineering	3
GEO ENG 5237	Geological Aspects Of Hazardous Waste Management	3
GEO ENG 5320	Groundwater Modeling	3
GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
CIV ENG 5640	Environmental Law And Regulations	3
PET ENG 3330	Well Logging	3

Quarry and Mine Engineering

GEO ENG 4276	**Environmental Aspects Of Mining**	**3**
GEO ENG 5471	**Rock Engineering**	**3**
GEO ENG 5575	**Aggregates And Quarrying**	**3**
CIV ENG 3116	**Construction Materials, Properties And Testing**	**3**
MIN ENG 3913	**Mineral Identification and Exploration**	**3**
MIN ENG 5612	**Principles of Explosives Engineering**	**3**
MIN ENG 5822	**Strata Control**	**3**
MIN ENG 5823	**Rock Mechanics**	**3**

MIN ENG 5912	**Mine Power and Drainage**	**3**

Renewable and Conventional Energy Resources

GEO ENG 5146	Applications Of Geographic Information Systems	3
GEO ENG 5556	Renewable Energy Systems	3
GEOLOGY 4421	**Radioactive Waste Management And Remediation**	**3**
or NUC ENG 4367	**Radioactive Waste Management And Remediation**	
GEOLOGY 5511	Applied Petroleum Geology	3
MIN ENG 5322	**Coal Mining Methods**	**3**
MIN ENG 5422	**Coal Preparation**	**3**
MIN ENG 5823	Rock Mechanics	3
~~GEO ENG 5381~~	~~Intermediate Subsurface Hydrology And Contaminant Transport Mechs~~	~~3~~
PET ENG 1110	Introduction to Petroleum Engineering	1
PET ENG 2510	Properties Of Hydrocarbon Fluids	3
PET ENG 3330	Well Logging	3
PET ENG 3520	Petroleum Reservoir Engineering	3
PET ENG 4520	Well Test Analysis	3

Accelerated BS/MS Option (Graduate Pathway)

Students nearing completion of a BS in geological engineering can share up to nine 5000- or 6000-level credit hours toward their BS degree and a MS degree in geological engineering simultaneously, if they satisfy the following criteria:

- **Have completed 64 credit hours of course work, including:**
  - **All chemistry and mathematics requirements, and**
  - **21 credit hours** ~~**Geological engineering students must earn the grade**~~ **of** ~~**"C" or better in all**~~ **geological engineering courses with a minimum GPA of 3.20 in the geological engineering courses.** ~~**to receive credit toward graduation.**~~

- ~~The benefits for undergraduate students admitted to the programare:Undergraduate and graduate courses may be chosen with greater flexibility,Up to six hours of 5000-level or above Geo Eng coursework may apply to both the BS and MS requirements,The classes taken for shared BS/MS credit may be taken at the lower undergraduate tuition rate,The GRE is not required for admission,Other graduate courses can be taken any time after entering the program as a dual enrolled student,Work on a thesis project may begin before the BS requirements arecompleted.To be eligible for the accelerated BS/MS Geo Eng program, a Geo Eng undergraduate must be at or beyond the junior level standing with a minimum of 48 credit hours, have successfully completed the Chemistry and Math requirements, and have completed 18 credit hours of Geo Eng courses at Missouri S&T with at least a 3.2 GPA in the Geo Engcourses.To be admitted, the student must complete the program application and must have the recommendation of a Geo Eng faculty member. All other MS degree requirements remain thesame.The program may be combined with existing honors research, emphasis areas, and certificateoptions.Admitted students will have both undergraduate and graduate records in the Registrar's Office. The Accelerated Program application must be completed within one semester after all shared-credit courses arecompleted.Courses taken for shared credit will be identified on the applicationform.These courses will also be listed on the student's Graduate Form 1 to be submitted after the student enters the graduateprogram.~~**Complete an application listing the courses** ~~The six hours of shared credit coursework,~~ to be **shared, with approval from the** ~~taken as~~ undergraduate ~~credit, must be approved by the academic~~ advisor and **a recommendation from the geological engineering faculty member who agrees to serve as their MS advisor. The shared courses** may not be undergraduate research, special problems, or transfer **courses. Applications are due within one semester of completing the last shared course.** ~~courses.~~
- **Follow all geological engineering non-thesis MS program requirements (see the Graduate Catalog).** ~~To be admitted, the student must complete the program application and must have the recommendation of a Geo Eng faculty member.~~

All other MS degree requirements remain the same. The program may be combined with existing honors research, emphasis areas, and certificate options. An additional six credit hours of coursework for graduate credit (beyond the shared BS/MS credits) can **be** ~~be~~ taken while in the undergraduate **program** ~~program~~ by applying for dual undergraduate/graduate enrollment. Taking additional courses for graduate credit as a dual enrolled student will require formal application to the graduate program. Acceptance to the **geological engineering** ~~Geo Eng~~ MS degree program from **this option** ~~the Accelerated Program~~ is automatic **as** ~~so~~ long **as the** ~~as the~~ student remains in good standing (GPA above 3.0 and B's or better in all graduate **courses** ~~courses)~~ within the **program).** ~~program.~~ To remain in **this option,** the ~~Accelerated Program, the~~ student must meet **geological engineering** ~~Geological Engineering~~ graduate ~~student~~ academic performance requirements and ~~must~~ maintain continuous enrollment at Missouri S&T. If the student exits the program before completion of the MS **degree,** ~~degree requirements,~~ or fails to maintain continuous enrollment at Missouri S&T, the shared-credit courses may not apply toward graduate requirements in the event of future **readmission.** ~~readmission.~~

It is the student's responsibility to check how dual-enrollment status and graduate coursework would affect scholarships and other financial aid. Graduate students are not eligible for Federal Pell Grants, though they are eligible for Federal Financial Aid, as well as fellowships and teaching/research assistantships. ~~It is international student's responsibility to check with the~~ International **students are responsible for checking with the International** Affairs Office during completion of an accelerated BS/MS to ensure immigration status is properly maintained throughout the program.

This option reduces the cost and the time required to earn a MS. See the Graduate Pathway section of this catalog, and the Geological Engineering Masters section of the Graduate Catalog, for additional details.

Justification for request
Supporting Documents
Course Reviewer Comments
kristyg (04/10/20 4:26 pm): Rollback: Rollback for updates for FS 2020 Catalog

Key: 156

Program Change Request

Date Submitted: 04/11/20 4:10 pm

Viewing: GE ENG-DE : Geological Engineering DE

File: 201.1

Last edit: 04/11/20 4:10 pm

Changes proposed by: gertschl

Start Term

Fall 2020

Program Code

GE ENG-DE

Department

Geosciences and Geological and Petroleum Engineering ~~Psychological Science~~

Title

Geological Engineering DE

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 04/12/20 7:27 am David Borrok (borrokd): Approved for RGEOSENG Chair
2. 04/13/20 8:35 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:49 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

Both the PhD and DE programs consist of 90 credit hours beyond the BS degree or 60 credit hours beyond the MS degree. If these degrees are not in geological engineering or a related field, remedial courses may be required. No course below the 5000-level may be applied to the degree requirements. The schedule of course work, research, and/or engineering design is developed by the student in consultation with, and subject to the approval of, their advising committee. There is no foreign language requirement. Details of requirements for this program not covered here can be found in the Academic Program Procedures section of this catalog.

The Doctor of Engineering (DE) program focuses on geological engineering aspects of a major engineering practice-oriented design project. A candidate for the DE must complete the equivalent of three years (six semesters) of full-time work beyond the BS degree for a total of 90 or more credit hours. In addition to formal course work, the candidate is expected to complete an internship with an industrial organization. This internship consists of a minimum of one year of planned and approved high-level engineering experience. At the end of the internship period, the student prepares an engineering design report supplemented by appropriate research, worth 18 to 25 credit hours (included in the 90 credit hour total).

Justification for request

Catalog update for FS2020, providing additional explanation and detail for the Geological Engineering DE program.

Supporting Documents

Course Reviewer Comments

Key: 201

Program Change Request

Date Submitted: 04/10/20 2:41 pm

Viewing: GE ENG-MI : Geological Engineering Minor

File: 61.4

Last approved: 07/20/15 3:11 pm

Last edit: 04/10/20 2:41 pm

Changes proposed by: gertschl

Catalog Pages Using this Program
Geological Engineering

Start Term
08/17/2015
Program Code
GE ENG-MI
Department
Geosciences and Geological and Petroleum Engineering
Title
Geological Engineering Minor

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 04/10/20 2:44 pm David Borrok (borrokd): Approved for RGEOSENG Chair
2. 04/10/20 4:25 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:49 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Aug 27, 2014 by pantaleoa
2. Aug 27, 2014 by pantaleoa
3. Jul 20, 2015 by pantaleoa

~~Minor in Geological Engineering Geological engineering offers employment opportunities for a broad spectrum of disciplines including civil, mining, nuclear, and petroleum engineering as well as for geologists andgeophysists.~~Geological Engineering Minor

A minor in geological engineering ~~or engineering geology, therefore,~~ enhances the academic credentials of a student **in any science or engineering discipline** and broadens **their** employment **opportunities.** ~~choices.~~ **It** ~~A minor in geological engineering~~ requires 15 hours of Missouri S&T credit **per** ~~to include~~ the **following curriculum, in approximate recommended order:** ~~following:~~

GEO ENG 1150	Physical and Environmental Geology [1]	3
GEO ENG 3175	Geomorphology And Terrain Analysis	3
GEO ENG 5331	Subsurface Hydrology	3
GEO ENG 5441	Engineering Geology And Geotechnics	3
GEO ENG Elective [2]		3
Total Credits		15

1	GEOLOGY 1110 may be substituted for geology and geophysics majors.
2	To be selected with geological engineering advisor approval.

Justification for request
Supporting Documents
Course Reviewer Comments

Key: 61

Program Change Request

Date Submitted: 04/11/20 4:15 pm

Viewing: GEO ENG-MS : GEOLOGICAL ENGINEERING MS

File: 268.7

Last approved: 05/20/19 1:15 pm

Last edit: 04/11/20 4:15 pm

Changes proposed by: gertschl

Catalog Pages Using this Program
Geological Engineering

Start Term
Fall **2020** ~~2019~~
Program Code
GEO ENG-MS
Department
Geosciences and Geological and Petroleum Engineering
Title
GEOLOGICAL ENGINEERING MS

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 03/15/20 3:56 pm David Borrok (borrokd): Approved for RGEOSENG Chair
2. 03/23/20 9:27 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/01/20 11:33 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
4. 04/10/20 4:26 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
5. 04/12/20 7:27 am David Borrok (borrokd): Approved for RGEOSENG Chair
6. 04/13/20 8:35 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
7. 04/22/20 8:49 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. May 20, 2019 by Katherine Grote (grotekr)

Master of Science

Geological Engineering

A master's degree in geological engineering can be earned in any of several ways:

- ~~MS Programrequirements:~~**Research Master** ~~For students pursuing a thesis-based master's degree, the requirements are those~~ of **Science (MS), during which the student completes a research project under** the **direction of a graduate faculty member and writes a comprehensive thesis about the results.** ~~campus, as given on Form 1 (https://grad.mst.edu/currentstudents/forms/).~~
- **Non-thesis (also called coursework) MS. This consists of passing a selection of courses customized to serve the needs of the student.**
- **Master of Engineering (ME). This consists of a selective course curriculum in addition to a practice-oriented project, for which a comprehensive engineering report is written. Currently our program offers a ME degree in geotechnics that is completed online.**

~~For students interested in a course-based (non-thesis) master's degree, the following study plan isrequired.~~Research MS in ~~30 hr non-thesis MS degree study plan for~~ Geological Engineering

The thesis MS program consists of a minimum of 30 credit hours, including at least 21 credit hours of lecture courses (at least 9 of which ~~Non-thesis MS students~~ must **be in** ~~take at least one course in each of the three core~~ geological **engineering), 6 or more credit hours of Geo Eng 6099 (Research),** ~~engineering areas indicated below,~~ and **enrollment in Geo Eng 6010 (Geological Engineering Graduate Seminar) for a minimum of two semesters.** ~~then must select one or more courses from each emphasis area.~~

The research topic and the course schedule are selected by the student in consultation with the advisor, who is assigned during the first semester of the student's program. The research is conducted, and the thesis is written and defended, by the student. Details of departmental and campus-wide requirements for the research MS degree can be found in the GGPE Department and Graduate Studies section of this catalog, respectively.

Coursework MS in Geological Engineering

The non-thesis MS program consists of a minimum of 30 credit hours, including at least one course in each of the three core areas (first table below), plus one or more courses from each of the four emphasis areas following. No fewer than four courses of the total must be geological engineering courses. Course substitutions ~~Substitutions for core geological engineering courses~~ may be made on a case-by-case basis, especially if some of these courses have been completed as part of the undergraduate curriculum.

Core Geological Engineering Courses

Take all 3 (9 credit hours). ~~Core Geological~~

GEO ENG 5443	Subsurface Exploration	3
GEO ENG 5331	Subsurface Hydrology	3
or GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	
GEO ENG 5441	Engineering Geology And Geotechnics	3
or GEO ENG 6441	Geotechnical Construction Practice	
or GEO ENG 6625	Applications in Geological Engineering	

~~30 credit hours must be passed to earn the MSdegree.~~**Engineering** ~~Areas(take all 3) = 9 hrsEngineering~~ **Geology and Geotechnics Emphasis Area**

Choose ~~(choose~~ 1-3 **courses;** ~~courses,~~ at least one course must be in **geological engineering (3** ~~the Geological Engineering department) = 3~~ to 9 **credit hours).** ~~hrsEnvironmental and Hydrology Emphasis Area(chose 1-3 courses) = 3 to 9 hrsEngineering Geophysics Emphasis Area(choose 1 to 2 courses) = 3 to 6 hrsData Analysis Emphasis Area(choose 1 to 2 courses) = 3 to 6 hrs*Additional substitutions may be made depending on availability, pre-requisites, and desired focus.~~

GEO ENG 5471	Rock Engineering	3
GEO ENG 6441	Geotechnical Construction Practice	3
GEO ENG 6477	Discontinuous Rock	3
GEO ENG 6625	Applications in Geological Engineering	3
CIV ENG 5715	Intermediate Soil Mechanics	3
CIV ENG 5716	Geotechnical Earthquake Engineering	3
CIV ENG 5729	Foundation Engineering II	3

Environmental and Hydrology Emphasis Area

Chose 1-3 courses (3 to 9 credit hours).

GEO ENG 5233	Risk Assessment In Environmental Studies	3
GEO ENG 5235	Environmental Geological Engineering	3

GEO ENG 5237	Geological Aspects Of Hazardous Waste Management	3
GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
GEO ENG 6235	Advanced Concepts Of Environmental Geological Engineering	3
GEO ENG 6237	Advanced Geological & Geotechnical Design For Hazardous Waste Mgt	3
GEO ENG 6331	Advanced Subsurface Hydrology	3

Engineering Geophysics Emphasis Area

Choose 1 to 2 courses (3 to 6 credit hours).

GEO ENG 5736	Geophysical Field Methods	3
GEO ENG 5761	Transportation Applications of Geophysics	3
GEO ENG 5782	Environmental and Engineering Geophysics	3
GEO ENG 6782	Surface Waves (MASW) and Ground Penetrating Radar (GPR)	3
GEO ENG 6784	**Advanced Engineering And Environmental Geophysics**	**3**

Data Analysis Emphasis Area

Choose 1 to 2 courses (3 to 6 credit hours).

GEO ENG 5144	Remote Sensing Technology	3
GEO ENG 5146	Applications Of Geographic Information Systems	3
GEO ENG 5315	Advanced Statistical Methods in Geology and Engineering	3
GEO ENG 5556	Renewable Energy Systems	3
COMP SCI 5204	Regression Analysis	3
STAT 5260	Statistical Data Analysis Using SAS	3
STAT 5346	Regression Analysis	3
STAT 5353	Statistical Data Analysis	3
STAT 5814	Applied Time Series Analysis	3

~~**These requirements will be viewed by the geological engineering graduate faculty at intervals no longer than threeyears.~~

Justification for request

The catalog description needs updating.

Supporting Documents

Course Reviewer Comments

kristyg (03/23/20 9:27 am): Change term from FS 2019 to FS 2020

kristyg (04/10/20 4:26 pm): Rollback: Rollback for updates for FS 2020 Catalog

Key: 268

Program Change Request

Date Submitted: 04/11/20 4:18 pm

Viewing: GEOT-ME : Geotechnics ME

File: 68.7

Last approved: 04/25/16 2:12 pm

Last edit: 04/11/20 4:18 pm

Changes proposed by: gertschl

Catalog Pages Using this Program
Geotechnics

Start Term
08/15/2016
Program Code
GEOT-ME
Department
Geosciences and Geological and Petroleum Engineering
Title
Geotechnics ME

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 04/12/20 7:27 am David Borrok (borrokd): Approved for RGEOSENG Chair
2. 04/13/20 8:35 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:49 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Jul 23, 2015 by pantaleoa
2. Apr 25, 2016 by norbert

~~Course Requirements TheM.E.degree program will require 30 semester hours of graduate credit in 4000, 5000, and 6000 levelcourses.The following four core courses (12 hours) arerequired:An additional 18 hours of coursework are required, included a 3 hour industrial (practice oriented) project (GEO ENG 6400).~~ **Course Requirements**

This web-based degree is designed for working professionals whose upward mobility requires an advanced ~~Of the total 30 credit hours required to obtain the~~ degree, **but who do** ~~a maximum of nine (9) credit hours of graduate-level work with a minimum grade of "B" can be transferred from other another institution, as long as the courses have~~ not **wish to take an extended leave of absence to physically attend college. It requires 30 credit hours of graduate credit in 4000, 5000,** ~~been used towards another degree,~~ and **6000 level courses, and a practice-oriented report instead of a research project.** ~~have been approved by the student's advisor.~~ **The following four core courses (12 credit hours) are mandatory:** ~~required:~~

GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
GEO ENG 5441	Engineering Geology And Geotechnics	3
GEO ENG 5471	Rock Engineering	3
GEO ENG 6400	**Practice Oriented Project**	**3**
CIV ENG 5715	Intermediate Soil Mechanics	3

Of the additional 15 credit hours ~~The balance~~ of **course work, up to 9 credit hours of graduate credit (minimum grade B) can** ~~the credit hours must~~ be **transferred from another university with advisor approval if not used toward another degree. The balance of the credit hours must be** ~~taken through~~ Missouri **S&T graduate courses. At least 15 credit hours must be geological engineering courses, and at least 9 credit hours must be from 6000-level courses.** ~~S&T.~~

~~A minimum of fifteen (15) credit hours must be geological engineeringcourses.~~

Justification for request
Updating after faculty review.
Supporting Documents
Course Reviewer Comments

Key: 68

Program Change Request

Date Submitted: 04/13/20 2:27 pm

Viewing: GL&GPH-BS : Geology and Geophysics BS

File: 64.47

Last approved: 06/14/19 2:14 pm

Last edit: 04/13/20 2:27 pm

Changes proposed by: sbrower

Catalog Pages Using this Program
Geology and Geophysics

Start Term
Fall **2020** ~~2019~~
Program Code
GL&GPH-BS
Department
Geosciences and Geological and Petroleum Engineering
Title
Geology and Geophysics BS

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 03/15/20 3:56 pm David Borrok (borrokd): Approved for RGEOSENG Chair
2. 03/23/20 9:28 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/03/20 12:53 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 04/10/20 4:26 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
5. 04/13/20 2:28 pm David Borrok (borrokd): Approved for RGEOSENG Chair
6. 04/13/20 2:29 pm Kristy Giacomelli-Feys (kristyg):

Approved for CCC Secretary
7. 04/17/20 1:59 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair

History

1. May 6, 2014 by Francisca Oboh-Ikuenobe (ikuenobe)
2. Apr 24, 2015 by wronk
3. Mar 27, 2017 by Kelly Liu (liukh)
4. Jun 18, 2018 by Kelly Liu (liukh)
5. Jun 14, 2019 by Sharon Lauck (laucks)

Bachelor of Science
Geology and Geophysics

A minimum of 127 credit hours is required for a Bachelor of Science degree in Geology and Geophysics. Students must average at least two grade points per credit hour and must obtain a letter grade of "C" or better in all Geology and Geophysics courses.

The Geology and Geophysics curriculum must include ENGLISH 1120 and ENGLISH 1160 , ECON 1100 or ECON 1200 , either HISTORY 1200 , HISTORY 1300 , HISTORY 1310 or POL SCI 1200 , and nine elective hours in humanities/social sciences. Specific requirements for the bachelor degree program are outlined in the sample program below

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
GEOLOGY 1110	3	GEOLOGY 1120[1]	3
ENGLISH 1120	3	GEOLOGY 1129[1]	1
CHEM 1310	4	Elective (Science & Eng)[2]	3
CHEM 1319	1	Humanities/Social Science Elective	3
CHEM 1100	1	MATH 1214	4
Humanities/Social Science Elective	3		
	15		14
Sophomore Year			

First Semester	Credits	Second Semester	Credits	Summer Semester	Credits
GEOLOGY 2610	4	GEOLOGY 2620[1]	4	GEOLOGY 2096	3
GEOPHYS 3210	3	GEOLOGY 3410	3		
COMP SCI 1970 & COMP SCI 1980 (or COMP SCI 1971 & COMP SCI 1981)	3	ENGLISH 1160 or 3560	3		
MATH 1215	4	ECON 1100 or 1200	3		
		HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3		
	14		16		3

Junior Year

First Semester	Credits	Second Semester	Credits	Summer Semester	Credits
GEOLOGY 3310	3	GEOLOGY 3620	3	GEOLOGY 4097	3
GEOLOGY 3319	1	GEOLOGY 3629	1		
PHYSICS 1135[3]	4	PHYSICS 2135[3]	4		
STAT 3113, or 3115, or 3117, or GEO ENG 4115	3	Elective (Geo & Geop)[4]	6		
Elective (Geo & Geop)[4]	3	Humanities/Social Sciences Elective	3		
	14		17		3

Senior Year

First Semester	Credits	Second Semester	Credits
GEOLOGY 4010	0.5	GEOPHYS 5096	3
Elective (Science & Eng)[2]	6	Elective (Science & Eng)[2]	9
Elective (Geo & Geop)[4]	9	Free Elective[5]	3
		GEOLOGY 4010	.5
	15.5		15.5

Total Credits: 127

1	Communications Emphasized (CE) courses
2	All Geology/Geophysics students must complete at least 15 hours of elective course work in science (which may include additional Geology/Geophysics courses), mathematics, and/or engineering, courses required for the basic program. 12 hours of this course work must be numbered 2000 or above.
3	Students may substitute PHYSICS 1111 and PHYSICS 1119 for PHYSICS 1135; PHYSICS 2111 and PHYSICS 2119 for PHYSICS 2135.
4	All Geology and Geophysics students must complete at least 18 hours of elective course work numbered 2000 or above in the Department of Geology and Geophysics, in addition to the required core curriculum.
5	Free elective hours may be taken in any combination of credit hours (1, 2, 3, etc.) and can include any course offerings at the University.

Core Curriculum

Taken by all students in Geology & Geophysics.		
GEOLOGY 1110	Physical And Environmental Geology	3
GEOLOGY 1120	Evolution Of The Earth	3
GEOLOGY 1129	Evolution of the Earth Laboratory [5]	1
GEOLOGY 2610	Mineralogy And Crystallography	4
GEOLOGY 2620	Igneous And Metamorphic Petrology	4
GEOLOGY 3310	Structural Geology	3
GEOLOGY 3319	Structural Geology Lab	1
GEOLOGY 3410	Introduction To Geochemistry	3
GEOLOGY 3620	Stratigraphy And Sedimentation	3
GEOLOGY 3629	Stratigraphy Lab	1
GEOLOGY 4010	Seminar	0.5
GEOLOGY 2096	Field Geology	3
GEOLOGY 4097	Advanced Field Geology	3
GEOPHYS 3210	Introduction to Geophysics	3
GEOPHYS 5096	Global Tectonics	3
Total Credits		38.5

Geology and Geophysics Focus Areas

Geochemistry

Students should complete at least 5 courses (15 hours minimum) from the list. Students may also choose additional courses to be selected from an approval list and with guidance from student's advisor.		
GEOLOGY 3511	Introduction to Mineral Deposits	3
GEOLOGY 4451	Aqueous Geochemistry	3
GEOLOGY 4461	Isotope Geochemistry	3
GEOLOGY 4631	Advanced Igneous and Metamorphic Petrology	4
GEOLOGY 4841	Geological Field Studies	3
GEOLOGY 5611	Granites And Rhyolites	4
GEOLOGY 5671	Clay Mineralogy	3
CER ENG 2110	Atomic Structure Of Crystalline Ceramics	3
CER ENG 3220	Phase Equilibria	3

General Geology

Students should complete at least 5 courses (15 hours minimum) from the list. Students may also choose additional courses to be selected from an approval list and with guidance from student's advisor.		
GEOLOGY 3511	Introduction to Mineral Deposits	3
GEOLOGY 4630	Systematic Paleontology	3
GEOLOGY 3811	Fundamentals Of Geographic Information Systems	3
GEOLOGY 4631	Advanced Igneous and Metamorphic Petrology	4

GEOLOGY 4711	Paleoclimatology and Paleoecology	3
GEOLOGY 4841	Geological Field Studies	3
GEOLOGY 5513	Petroleum Geology	3
GEOLOGY 5611	Granites And Rhyolites	4
GEOLOGY 5741	Micropaleontology	3
GEOLOGY 6311	Advanced Structural Geology	3
GEO ENG 3175	Geomorphology And Terrain Analysis	3

Geophysics

Students must choose 1 math and 3 geophysics courses from the list. Students should also choose at least one additional course to be selected from an approved list and with guidance from student's advisor.		
MATH 2222	Calculus with Analytic Geometry III	4
MATH 3304	Elementary Differential Equations	3
MATH 3108	Linear Algebra I	3
MATH 5325	Partial Differential Equations	3
GEOPHYS 4231	Seismic Interpretation	3
GEOPHYS 5202	Exploration and Development Seismology	3
GEOPHYS 5231	Seismic Data Processing	3
GEOPHYS 5261	Computational Geophysics	3
GEOPHYS 5736	Geophysical Field Methods	3
GEOLOGY 4310	Remote Sensing Technology	3

Groundwater and Environmental Geochemistry

Students should complete at least 5 courses (15 hours minimum) from the list. Students may also choose additional courses to be selected from an approval list and with guidance from student's advisor.		
GEOLOGY 4411	Hydrogeology	3
GEOLOGY 4431	Methods Of Karst Hydrogeology	3
GEOLOGY 4451	Aqueous Geochemistry	3
GEOLOGY 4711	Paleoclimatology and Paleoecology	3
GEOPHYS 5782	Environmental and Engineering Geophysics	3
BIO SCI 1173	Introduction to Environmental Sciences	3
ENV ENG 2601	Fundamentals Of Environmental Engineering and Science	3
ENV ENG 5640	Environmental Law And Regulations	3
GEO ENG 5237	Geological Aspects Of Hazardous Waste Management	3
GEO ENG 5331	Subsurface Hydrology	3

Petroleum Geology

Students should complete at least 5 courses (15 hours minimum) from the list. Students may also choose additional courses to be selected from an approval list and with guidance from student's advisor.		

GEOLOGY 4630	Systematic Paleontology	3
GEOLOGY 5311	Depositional Systems	3
GEOLOGY 5513	Petroleum Geology	3
GEOLOGY 5661	Advanced Stratigraphy and Basin Evolution	3
GEOLOGY 5741	Micropaleontology	3
GEOPHYS 5202	Exploration and Development Seismology	3
PET ENG 3330	Well Logging	3
GEOLOGY 4310	Remote Sensing Technology	3

Accelerated BS/MS Program Option for Geology and Geophysics Majors

Geology and Geophysics undergraduates in G&G at Missouri S&T may opt to apply for an accelerated BS/MS G&G program where a student can achieve both the BS and MS degrees in G&G faster than if pursuing the degrees separately. The degrees awarded will be a BS & MS **(non-thesis or thesis) in** ~~in~~ Geology and Geophysics.

The benefits for undergraduate students admitted to the program are:

- Undergraduate and graduate courses may be chosen with greater flexibility,
- Up to nine hours **of 5000-level** ~~of 4000~~ or ~~5000-level or~~ above G&G coursework may apply to both the BS and MS requirements,
- The classes taken for shared BS/MS credit may be taken at the lower undergraduate tuition rate,
- The GRE is not required for admission,
- Other graduate courses can be taken any time after entering the program as a dual enrolled student,
- Work on a thesis project may begin before the BS requirements are completed.

To be eligible for the accelerated BS/MS G&G program, a G&G undergraduate must be at or beyond the junior level standing with a minimum of 48 credit hours. They must have successfully completed the Chemistry and Math requirements and have completed 21 credit hours of G&G courses at Missouri S&T with at least a 3.2 GPA in the G&G courses. To be admitted, the student must complete the program application and **non-thesis MS students** must have the recommendation of a G&G faculty **member, while thesis MS students must have** ~~member who agrees to serve as~~ the **recommendation of a G&G faculty member who agrees to serve as** ~~graduate thesis advisor. All other MS degree requirements remain~~ the **graduate thesis advisor. All other MS degree requirements remain the** same. The program may be combined with existing honors research, emphasis areas, and certificate options. Admitted students will have both undergraduate and graduate records in the Registrar's Office.

The Accelerated Program application must be completed within one semester after shared-credit courses are completed. Courses taken for shared credit will be identified on the application form. These courses will also be listed on the student's Graduate Form 1 to be submitted after the student enters the graduate program. The **nine** ~~six~~ hours of shared-credit coursework, to be taken as undergraduate credit, must be approved by the academic advisor, and may not be undergraduate research, special problems, or transfer courses. An additional six credit hours of coursework for graduate credit (beyond the shared BS/MS credits) can be taken while in the undergraduate program by applying for dual undergraduate/graduate enrollment. Taking additional courses for graduate credit as a dual enrolled student will require formal application to the graduate program. Acceptance to the G&G MS degree from the Accelerated Program is automatic so long as the student remains in good standing (GPA above 3.0 and B's or better in all graduate courses) within the program. To remain in the Accelerated Program, the student must maintain good standing within the undergraduate G&G program and must maintain continuous enrollment at Missouri S&T. If the student exits the program before completion of the MS degree requirements, or fails to maintain continuous enrollment at Missouri S&T, the shared-credit courses may not apply toward graduate requirements in the event of future readmission.

It is the student's responsibility to check on how dual-enrollment status and graduate coursework affects scholarships and other financial aid. As a graduate student, you **are not** eligible for Federal Pell Grants. You are still eligible for Federal Financial Aid. You may be eligible

for fellowships and teaching/research assistantships. It is the International student's responsibility to check with international affairs during completion of an accelerated BS/MS to ensure immigration status will be maintained throughout the program.

Justification for request

Minor update to text for accelerated program for FS20 catalog.

Supporting Documents

Course Reviewer Comments

kristyg (03/23/20 9:28 am): changed term from FS2019 to FS 2020

kristyg (04/10/20 4:26 pm): Rollback: Rollback for updates for FS 2020 Catalog

Key: 64

Program Change Request

Date Submitted: 04/13/20 2:27 pm

Viewing: GL&GPH-MS : Geology and Geophysics MS

File: 166.19

Last approved: 10/25/19 9:31 am

Last edit: 04/13/20 2:27 pm

Changes proposed by: kristyg

Catalog Pages Using this Program
Geology and Geophysics

Start Term
Fall 2020
Program Code
GL&GPH-MS
Department
Geosciences and Geological and Petroleum Engineering
Title
Geology and Geophysics MS

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 03/15/20 3:56 pm David Borrok (borrokd): Approved for RGEOSENG Chair
2. 03/23/20 9:28 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/03/20 12:54 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 04/10/20 4:27 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
5. 04/13/20 2:28 pm David Borrok (borrokd): Approved for RGEOSENG Chair
6. 04/13/20 2:29 pm Kristy Giacomelli-Feys (kristyg):

Approved for CCC Secretary
7. 04/17/20 1:59 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair

History

1. Jun 17, 2014 by pantaleoa
2. Jun 22, 2015 by pantaleoa
3. Jul 23, 2015 by pantaleoa
4. Jun 14, 2019 by Sharon Lauck (laucks)
5. Oct 25, 2019 by Sharon Lauck (laucks)

Graduate work in geology and geophysics is offered at both the master of science (thesis and non-thesis) and doctoral levels. Programs are designed to provide you with an understanding of the fundamentals and principles of geology, geochemistry, and geophysics. Research investigations comprise a significant part of each program, and at the doctoral level an original contribution to the science is required.

Research emphasis of the program is in:

- Low Temperature and Environmental Geochemistry
- Mineralogy/Petrology/Economic Geology
- Geophysics/Tectonics/Remote Sensing
- Sedimentology/Paleontology/Stratigraphy/Petroleum Exploration

In geology and geochemistry, opportunities for research at both the M.S. and Ph.D. levels are available in mining geology, petroleum geology, environmental geochemistry, stratigraphy and sedimentation, clay mineralogy, remote sensing, GIS, palynology, structural geology, igneous and metamorphic petrology, volcanology, and planetary geology.

In geophysics, opportunities for research at both the M.S. and Ph.D. levels are available in the areas of reflection and refraction seismology, theoretical seismology, geophysical data analysis, gravity, magnetics, seismic hazards, and computational geophysics.

The study of the Earth and other planets includes all areas of scientific inquiry. To work effectively in so broad a discipline requires considerable depth and breadth of understanding of physical principles and advanced proficiency in mathematics, particularly for those students contemplating advanced studies in geophysics. A thorough undergraduate training in an earth or physical science is a prerequisite for advanced study in geology or geophysics.

Earth sciences have been an integral part of the university since its founding. The program has a long and proud history of faculty and students who have contributed to the advancement of the science, to mineral and hydrocarbon exploration, and to protecting the environment. The university was formerly the Missouri School of Mines. Because of the school's tradition and location near the Missouri Lead District, the emphasis of the program has been in exploration for mineral and petroleum resources. The program has expanded to

include environmental geochemistry, geophysics, soft rock geology, and planetary geology. Our graduates find employment in the mining, petroleum, and environmental industries, as well as with government agencies and academia. The program provides students with diverse educational opportunities to prepare themselves to seek employment in any area of the earth sciences.

The program has a wide variety of equipment for research and exploration in geology, geochemistry, and geophysics. Interaction with mining engineering, geological engineering, petroleum engineering, metallurgy, environmental engineering, biological sciences and various other programs/departments is routine. Our faculty and graduate students commonly participate in collaborative research with other departments on campus as well as universities worldwide. In addition, cooperative research and internship opportunities with the Missouri Geological Survey, the U.S. Geological Survey's National Geospatial Technical Operations Center and the Mark Twain National Forest Service, all located in Rolla, are available. Cooperative programs with local mining companies, petroleum companies, or other industries are also possible. Thus, your research interests need not fall entirely within the interests of our faculty or within the bounds of the equipment directly available within the program.

A B.S. degree is essential for professional practice in geology or geophysics in industry. Due to the increasing complexity of jobs in the geosciences, the M.S. degree is recognized as the "professional degree" for geoscientists desiring employment in the Petroleum, Minerals, and many other industries. The Ph.D. degree is for those students that want to conduct original research with purpose of adding new knowledge in a specific area of the geosciences. Successful Ph.D. candidates find employment in academia or research centers in government agencies or corporate research labs.

Two M.S. degree options are available: thesis and non-thesis. All Geology and Geophysics MS students are required to take the Professional Geosciences Skills course (GEOLOGY 5100) and either Advanced Physical Geology (GEOLOGY 5111) or Global Tectonics (GEOPHYS 5096). For students whose native language is not English, a minimum score of 79 **TOEFL, or a minimum** ~~on the standard Test~~ of **53 PTE, or a minimum of 6.5 IELTS is** ~~English as a Foreign Language is~~ generally required for admission. **Suggested minimum GRE scores: Q150 and A(W) 3.0 and (verbal score + quantitative score = 300)**

~~The minimum Graduate Record Examinations (GRE) scores required for acceptance consideration in the Geology and Geophysics graduate program are Q = 148, Q+V = 300, and A(W) =3.0.~~

Justification for request

Should not have been rolled back.

Supporting Documents

Course Reviewer Comments

kristyg (04/10/20 4:27 pm): Rollback: Rollback for updates for FS 2020 Catalog

Key: 166

Program Change Request

Date Submitted: 03/20/20 11:33 am

Viewing: I/O PSY-MI : Indus/Organization Psych Minor

File: 72.5

Last approved: 11/02/18 11:30 am

Last edit: 03/20/20 11:33 am

Changes proposed by: burnsde

Catalog Pages Using this Program
Psychology

Start Term
Fall 2019
Program Code
I/O PSY-MI
Department
Psychological Science
Title
Indus/Organization Psych Minor

Program Requirements and Description

In Workflow

1. **RPSYCHOL Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 04/01/20 11:00 am Susan Murray (murray): Approved for RPSYCHOL Chair
2. 04/03/20 3:19 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/23/20 4:32 pm Kristy Giacomelli-Feys (kristyg): Approved for Social Sciences DSCC Chair

History

1. May 7, 2014 by Lahne Black (lahne)
2. May 7, 2014 by Lahne Black (lahne)
3. Nov 2, 2018 by Susan Murray (murray)

Industrial/Organizational Psychology Minor

Requirements include:

PSYCH 1101	General Psychology	3
PSYCH 4700	Industrial Psychology	3
PSYCH 4602	Organizational Psychology	3
and 2 of the following		
PSYCH 4600	Social Psychology	3
PSYCH 4710	Human Factors	3
PSYCH 4500	Personality Theory	3
PSYCH 4601	**Group Dynamics**	**3**

Justification for request

Add group dynamics as an option

Supporting Documents

Course Reviewer Comments

Key: 72

Program Change Request

Date Submitted: 04/01/20 10:54 am

Viewing: INORGPS-MS : Industrial Organizational Psychology MS

File: 234.25

Last approved: 02/27/18 10:03 am

Last edit: 04/01/20 10:54 am

Changes proposed by: burnsde

Catalog Pages Using this Program
Psychology

Start Term
Fall 2018
Program Code
INORGPS-MS
Department
Psychological Science
Title
Industrial Organizational Psychology MS

Program Requirements and Description

In Workflow

1. **RPSYCHOL Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 04/01/20 11:02 am Susan Murray (murray): Approved for RPSYCHOL Chair
2. 04/03/20 3:19 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/23/20 4:32 pm Kristy Giacomelli-Feys (kristyg): Approved for Social Sciences DSCC Chair

History

1. Apr 17, 2014 by Lahne Black (lahne)
2. Apr 17, 2014 by Lahne Black (lahne)
3. Apr 24, 2014 by Lahne Black (lahne)
4. Apr 24, 2014 by Lahne Black (lahne)

5. Apr 24, 2014 by Lahne Black (lahne)
6. May 7, 2014 by Lahne Black (lahne)
7. Jul 8, 2014 by pantaleoa
8. Jul 29, 2014 by pantaleoa
9. Jun 19, 2015 by nstone
10. Jun 23, 2015 by pantaleoa
11. Jul 24, 2015 by pantaleoa
12. Jul 24, 2015 by pantaleoa
13. Dec 1, 2016 by Nathan Weidner (weidnern)
14. Jul 11, 2017 by Crystal Wilson (wilsoncry)
15. Feb 27, 2018 by Nathan Weidner (weidnern)

Master of Science in Industrial-Organizational Psychology

Admission Requirements

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

Program Requirements

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

Core Courses (24 hours)	
PSYCH 5020	Introduction to Industrial-Organizational Psychology
PSYCH 5601	Small Group Dynamics
PSYCH 5602	Organizational Development
PSYCH 5700	Job Analysis and Performance Management
PSYCH 6610	Leadership, Motivation, and Culture
PSYCH 6702	Personnel Selection
PSYCH 6602	Employee Affect and Behavior

PSYCH 6700	Training and Development
Methods Courses (10 hours)	
PSYCH 5201	Psychometrics
PSYCH 5210	Advanced Research Methods
PSYCH 5012	Ethics and Professional Responsibilities
PSYCH 5202	Applied Psychological Data Analysis
Electives from list below or Thesis (6 hours)	
PSYCH 5710	Advanced Human Factors
PSYCH 5600	Advanced Social Psychology
PSYCH 5001.001	Advanced Cognitive Psychology
PSYCH 5001.002	Occupational Health and Safety
Students completing a thesis would need to complete the following in place of electives:	
PSYCH 6099	Research

Justification for request

fixed a broken link

Supporting Documents

Course Reviewer Comments

Key: 234

Program Change Request

Date Submitted: 03/30/20 9:37 pm

Viewing: IST-MI : Information Sci & Tech Minor

File: 74.10

Last approved: 07/14/15 3:39 pm

Last edit: 03/30/20 9:37 pm

Changes proposed by: cecq8z

Catalog Pages Using this Program
Business and Management Systems
Information Science and Technology

Start Term
08/17/2015
Program Code
IST-MI
Department
Business and Information Technology
Title
Information Sci & Tech Minor

Program Requirements and Description

In Workflow

1. **RINFSCTE Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 04/24/20 11:01 am siauk: Approved for RINFSCTE Chair
2. 04/24/20 2:45 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 3:26 pm Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair

History

1. Apr 28, 2014 by Barry Flachsbart (barryf)
2. Jul 14, 2015 by pantaleoa

Minor in Information Science and Technology

The minor in information science and technology requires the following 15 hours of coursework:

IS&T 1750 Introduction to Management Information Systems

IS&T 1551 Implementing Information Systems: User Perspective or IS&T 1561 Algorithms and Programming with Java

IS&T 1552 Implementing Information Systems: Data Perspective or IS&T 1562 Java and Data Structures

ERP 2110 Introduction to Enterprise Resource Planning

One other IS&T or ERP course at the 2000 level or above.

~~IS&T 1750~~	~~Introduction to Management Information Systems~~	~~3~~
~~IS&T 1551~~	~~Implementing Information Systems: User Perspective~~	~~3~~
~~IS&T 1552~~	~~Implementing Information Systems: Data Perspective~~	~~3~~
~~ERP 2110~~	~~Introduction to Enterprise Resource Planning~~	~~3~~
~~One other IS&T or ERP course at the 2000 level or above.~~		~~3~~
Total Credits		0

Justification for request
Fix issues in Course Catalog
Supporting Documents
Course Reviewer Comments

Key: 74

Program Change Request

Date Submitted: 03/09/20 4:04 pm

Viewing: MATH-MST : Mathematics MST

File: 84.8

Last approved: 03/23/18 1:11 pm

Last edit: 03/09/20 4:04 pm

Changes proposed by: prunnion

Catalog Pages Using this Program

Mathematics and Statistics

Start Term

Fall 2018

Program Code

MATH-MST

Department

Mathematics & Statistics

Title

Mathematics MST

Program Requirements and Description

In Workflow

1. **RMATHEMA 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. Kristy Giacomelli-Feys

Approval Path

1. 03/13/20 2:46 pm vsam: Approved for RMATHEMA Chair
2. 03/23/20 9:29 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/03/20 12:54 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair

History

1. Feb 20, 2014 by Ilene Morgan (imorgan)
2. Jul 23, 2015 by pantaleoa
3. Jun 27, 2016 by Ilene Morgan (imorgan)
4. Mar 23, 2018 by Paul Runnion

(prunnion)

The master of science for teachers program is primarily designed for secondary school teachers in the physical sciences and mathematics. The program of study must include at least **30** ~~32~~ hours of courses numbered at the 4000-level or above in science and mathematics, three hours of which must be at the 6000-level. A student may substitute up to six credit hours of coursework at the 3000 level in place of six hours of 4000 level courses; any such courses must be from departments other than mathematics and statistics and are subject to the approval of the student's master's committee.

Justification for request

For this program, we are reducing the number of required hours from 32 to 30. Many years ago, we offered some 4 credit hour summer seminars as part of this program which are no longer offered, and those led to the 32 hour requirement. Since almost all coursework these students would be taking are 3 credit hour courses, having a total number of hours which is not a multiple of 3 makes positively no sense and we want to fix it.

Supporting Documents

Course Reviewer Comments

Key: 84

Program Change Request

Date Submitted: 04/05/20 4:45 pm

Viewing: MGTLEAD-CT : Management and Leadership

File: 291.2

Last approved: 06/12/19 4:07 pm

Last edit: 04/05/20 4:45 pm

Changes proposed by: cecq8z

Catalog Pages Using this Program
Business Administration

Start Term
Fall **2020** ~~2019~~
Program Code
MGTLEAD-CT
Department
Business and Information Technology
Title
Management and Leadership

Program Requirements and Description

In Workflow

1. **RINFSCTE Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 04/24/20 11:02 am siauk: Approved for RINFSCTE Chair
2. 04/24/20 2:45 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 3:26 pm Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair

History

1. Jun 12, 2019 by Brittany Parnell (ershenb)

Management and Leadership

This certificate is designed to prepare students to be the leaders of the future, by enabling them to manage through the use of technology. Understanding technology is becoming ever more critical in business as a tool used by efficient and effective managers. These leaders not only understand the managerial process and how to inspire others, but also know how to harness technology to expedite the process. The certificate incorporates management theories, technological savvy, and leadership skills to create a student who is ready for the challenges of a fast paced managerial position.

A student admitted to this graduate certificate must complete four courses:

Required Core Course:

BUS 6121 Team-building and Leadership

Elective Courses (Choose Three):

BUS 5580: Strategic Management

IST 5251 Technological Innovation Mgmt and Leadership

IST 6261: Advanced Information Systems Project Management

IST/PHILOS 5168 – Law and Ethics in E-Commerce

BUS 6111 - Business Negotiations

MKT 6150 - Advanced Customer Focus and Satisfaction

BUS 5470 - Human Resource Management

EMGT 5320 – Project Management

BUS 6425 - Supply Chain and Project Management

BUS 6723 - Artificial Intelligence, Robotics, and Information Systems Management

~~BUS 6121~~	~~Teambuilding and Leadership~~
~~Three courses from the following list:~~	
~~IS&T 5168/PHILOS 4368~~	~~Law and Ethics in E-Commerce~~
~~IS&T 5251~~	~~Technological Innovation Management and Leadership~~
~~IS&T 6261~~	~~Advanced Information Systems Project Management~~
~~BUS 5470~~	~~Human Resource Management~~
~~BUS 5580~~	~~Strategic Management~~
~~BUS 6111~~	~~Advanced Business Negotiations~~
~~BUS 6150~~	~~Advanced Customer Focus and Satisfaction~~
~~ENG MGT 5320~~	~~Project Management~~

Justification for request

Due to staff shortages, certain courses are not being offered at this time. The additional two courses allow the department to fill the vacuum without compromising the integrity of the certificate.

Supporting Documents

Course Reviewer Comments

Key: 291

Program Change Request

Date Submitted: 03/17/20 3:55 pm

Viewing: MI ENG-MI : Mining Engineering Minor

File: 98.6

Last approved: 04/28/14 2:13 pm

Last edit: 03/23/20 10:15 am

Changes proposed by: kabp3

Catalog Pages Using this Program
Mining Engineering

Start Term
Fall 2020 ~~8/1/2014~~
Program Code
MI ENG-MI
Department
Mining & Nuclear Engineering
Title
Mining Engineering Minor

Program Requirements and Description

In Workflow

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

Approval Path

1. 03/23/20 9:59 am Kwame Awuah-Offei (kwamea): Approved for MINEXP ENG Chair
2. 03/23/20 10:15 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/01/20 11:33 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Apr 28, 2014 by Kwame Awuah-Offei (kwamea)

Minor in Mining Engineering

A student who receives a Bachelor of Science degree in an accredited engineering program from Missouri S&T may receive the Minor in Mining Engineering by completing 15 credit hours from the courses listed below. Non-engineering students who have a strong background in mathematics and the physical sciences may also qualify for the Minor in Mining Engineering or Explosives Engineering with the approval of the Department and based on an individually designed program of study. Students will need to consult with the Chair of the Mining Engineering Program to determine pre-requisite requirements for each course. The program granting the Bachelor of Science degree shall determine whether or not courses taken for the Mining Engineering Minor or Explosives Engineering Minor may also be used to fulfill the requirements of the B.S. degree from that program.

The following courses are required for the Minor in Mining Engineering:

MIN ENG 3913	Mineral Identification and Exploration	3
~~MIN ENG 4932~~	~~Course MIN ENG 4932 Not Found~~	~~3~~
~~MIN ENG 4933~~	~~Course MIN ENG 4933 Not Found~~	~~3~~
MIN ENG 5932	**Underground Mining Methods**	**3**
MIN ENG 5933	**Surface Mining Methods**	**3**

Two other Mi Eng 3000-, 4000-, or 5000-level lecture courses (3 credit hours), or relevant courses from other disciplines, as approved, must be taken to match the student's area of emphasis in Mining Engineering. The following areas of emphasis may be pursued:

Explosives Engineering; Quarrying; Mineral Economics; Mining-Environmental; Mining-Equipment; Mining-Geo-technical; Mining-Health and Safety; Mining Operations Management; Mining-Tunneling; Sustainable Development; Surface Mining; Underground Mining.

The Minor in Mining Engineering is not accredited by the Accreditation Board of Engineering and Technology (ABET).

Justification for request

The program changed its BS curriculum with attendant changes in course numbers. Min Eng 4932 and 4933 are no longer in the catalog. Instead, Min Eng 5932 and Min Eng 5933 are offered in the BS curriculum.

Supporting Documents

Course Reviewer Comments

kristyg (03/23/20 10:15 am): Change effective term to FS 2020

Key: 98

Program Change Request

Date Submitted: 03/17/20 4:00 pm

Viewing: MNRL PR-MI : Mineral Process Eng Minor

File: 94.2

Last approved: 07/23/14 12:21 pm

Last edit: 03/23/20 10:15 am

Changes proposed by: kabp3

Catalog Pages Using this Program
Mining Engineering

Start Term
Fall 2020 ~~8/1/2014~~
Program Code
MNRL PR-MI
Department
Mining & Nuclear Engineering
Title
Mineral Process Eng Minor

Program Requirements and Description

In Workflow

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

Approval Path

1. 03/23/20 9:59 am Kwame Awuah-Offei (kwamea): Approved for MINEXP ENG Chair
2. 03/23/20 10:15 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/01/20 11:33 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Jul 23, 2014 by Lahne Black (lahne)

Minor in Mineral Processing

The minor in Mineral Processing provides an in-depth study of the fundamental theories and applications of mineral and coal processing and aggregate materials sizing and classification. Any student who receives a Bachelor of Science degree in an accredited engineering program from Missouri S&T may also receive the minor in Mineral Processing by completing 15 credit hours in this specialty. The B.S. degree granting program shall determine whether or not courses taken for the minor in Mineral Processing may also be used to fulfill the requirements of the B.S. degree from that program.

The following courses are required for the minor in Mineral Processing:

~~MIN ENG 3412~~	~~Course MIN ENG 3412 Not Found~~	~~3~~
~~MIN ENG 4422~~	~~Course MIN ENG 4422 Not Found~~	~~3~~
~~MIN ENG 4412~~	~~Course MIN ENG 4412 Not Found~~	~~3~~
~~MIN ENG 4423~~	~~Course MIN ENG 4423 Not Found~~	~~3~~
~~MIN ENG 4424~~	~~Course MIN ENG 4424 Not Found~~	~~3~~
MIN ENG 2412	**Principles Of Mineral Processing**	**3**
MIN ENG 5412	**Aggregates Materials Sizing and Characterization**	**3**
MIN ENG 5422	**Coal Preparation**	**3**
MIN ENG 5423	**Flotation and Hydrometallurgy**	**3**
MIN ENG 5424	**Mineral Processing II Mechanics And Design**	**3**

Justification for request

The program changed its BS curriculum with attendant changes in course numbers. The listed courses are no longer in the catalog.

Supporting Documents

Course Reviewer Comments

kristyg (03/23/20 10:15 am): Changed effective term to FS 2020

Key: 94

Program Change Request

Date Submitted: 03/24/20 1:22 pm

Viewing: MUSIC-MI : Music Minor

File: 190.1

Last edit: 04/01/20 10:39 am

Changes proposed by: karmannc

Catalog Pages Using this Program
Music

Start Term
Fall 2020
Program Code
MUSIC-MI
Department
Arts, Languages, & Philosophy
Title
Music Minor

Program Requirements and Description

In Workflow

1. **RPHILOSO Chair**
2. **CCC Secretary**
3. **Arts & Humanities 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. Kristy Giacomelli-Feys

Approval Path

1. 04/01/20 10:40 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 04/03/20 3:19 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/03/20 4:12 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Music Minor Curriculum

1.Students will take three ensemble courses, to be chosen from Band, Choir, Orchestra.

2.Students will take twelve credits of courses chosen from the following list:

- Music 1150

- Music 2161

- Music 2162

- Music 3251

- Music 3252

- Music 2001 Special Topics LEC 1A Music of Latin America

- Music 2001 Special Topics LEC 2A History of Music for Film

- Music 3001 Special Topics LEC 1A Introduction to Composition and Arranging

3. Other courses may be substituted with written permission from the Music Minor Advisor and approval from the Department Chair of ALP

~~Music Minor CurriculumThe following courses will betaken:Eight hours ofttheory.Six hours of music history andliterature.Six hours of applied private instruction (two years), culminating in an approved recital or otherappearance.The successful music minor will demonstrate adequate keyboard proficiency or take keyboard until proficiency isattained.The music minor will participate in one or more major ensembles per semester (band, jazz, orchestra, vocal,opera).~~

Justification for request

Current minor requirements are antiquated and do not represent industry standards. New requirements will better align our curriculum with other universities offering a music minor.

Supporting Documents

Course Reviewer Comments

audram (04/01/20 10:39 am): Clarified point 1.

Key: 190

Program Change Request

New Program Proposal

Date Submitted: 04/15/20 4:05 pm

Viewing: PROPOSED : Advanced Engineering Materials Certificate

File: 358

Last edit: 04/24/20 9:34 am

Changes proposed by: smiller

Start Term
Fall 2020
Program Code
PROPOSED
Department
Materials Science & Engineering
Title
Advanced Engineering Materials Certificate

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 04/15/20 4:21 pm Greg Hilmas (ghilmas): Approved for RMATSENG Chair
2. 04/24/20 9:18 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 12:13 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

Missouri University of Science and Technology offers a graduate certificate in Advanced Engineering Materials for working professionals. The graduate certificate program consists of four courses from existing graduate-level courses. While the students admitted to the certificate program will have non-matriculated status, if they complete the four course sequence with a grade of B or better in each of the courses taken, they will be admitted to the master's degree program, if they so choose. The certificate credits taken by students admitted to the master’s program will count toward their master's degrees.

The Advanced Engineering Materials Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in Engineering, Science, and/or Mathematics and who have a minimum of one year of professional employment experience, or are currently accepted into a

graduate degree program at Missouri S&T. Once admitted to the program, the student must take the four designated courses (provided in the curriculum section). In order to receive a Graduate Certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given three years to complete the program.

Students admitted to the Advanced Engineering Materials Certificate Program will have non-degree graduate status, however, they will earn graduate credit for the courses they complete. If the four-course sequence is completed with a grade of B or better in each of the courses taken, the student, upon application, will be admitted to the Master's degree program sponsoring the graduate certificate, provided that all other program prerequisites and admission requirements are met. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degrees. Students who do not have all of the prerequisite courses necessary to begin the courses in the Advanced Engineering Materials Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

Students enrolled in this certificate will take one required course and three elective courses.

Required Course:

MET ENG 5810 Principles Of Engineering Materials ()

Any three of the following courses:

CER ENG 5230 Glass Science And Engineering ()

CER ENG 5310 Advanced Ceramic Processing ()

CER ENG 6230 Composite Materials ()

MS&E 5230 Energy Materials ()

MET ENG 5150 Introduction to Metal Additive Manufacturing ()

MET ENG 5330 Nonferrous Alloys ()

Justification for request
CIP Code: 141801
The graduate certificate in Advanced Engineering Materials would provide working professionals and graduate level students with insights into a wide-range of advanced engineering materials. The certificate can be marketed by the Materials Science and Engineering department to increase enrollment in the graduate courses with distance offerings and to recruit additional Master's degree students to the department.
Supporting Documents
MS&T PC Nov 2019.pdf
Course Reviewer Comments
sraper (04/24/20 9:34 am): Capitalized Certificate in title.

Key: 358

Program Change Request

New Program Proposal

Date Submitted: 02/26/20 2:35 pm

Viewing: PROPOSED : Geoanalytics and Geointelligence Certificate

File: 351

Last edit: 02/26/20 2:35 pm

Changes proposed by: sbrower

Start Term
Fall 2020
Program Code
PROPOSED
Department
Geosciences and Geological and Petroleum Engineering
Title
Geoanalytics and Geointelligence Certificate

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 02/27/20 7:29 am David Borrok (borrokd): Approved for RGEOSENG Chair
2. 03/03/20 1:55 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/01/20 11:33 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

The graduate certificate in Geoanalytics and Geointelligence is designed to provide formalized education in the areas of geoanalytics, geospatial data analysis, and geointelligence.

The Geoanalytics and Geointelligence Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in Geology, Geophysics, Geological Engineering, Geotechnics, Civil Engineering, or similar programs or who are currently accepted into a graduate degree program in one of these fields at Missouri S&T. Once admitted to the program, the student must take the four designated courses (provided in the curriculum section). In order to receive a Graduate Certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given three years to complete the program.

Students admitted to the Geoanalytics and Geointelligence Certificate Program will have non-degree graduate status, however, they will earn graduate credit for the courses they complete. If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to their choice of non-thesis M.S. degree programs in either Geological Engineering or Geology and Geophysics. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degree. Students who do not have all of the prerequisite courses necessary to begin the courses in the Geoanalytics and Geointelligence Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

Required Course:		
GEO ENG 5144	Remote Sensing Technology	3
Three of the following courses are required:		
POL SCI 4500	Geopolitics and International Security	3
PET ENG 4111	Fundamental Digital Applications In Petroleum Engineering	3
GEO ENG 4115	Statistical Methods in Geology and Engineering [1]	3
or GEO ENG 5315	Advanced Statistical Methods in Geology and Engineering	
GEO ENG 5146	Applications Of Geographic Information Systems	3
GEOPHYS 5261	Computational Geophysics	3
COMP SCI 5402	Introduction to Data Mining [2]	3
or COMP SCI 5400	Introduction To Artificial Intelligence	
GEO ENG 5642	Military Geology	3
GEO ENG 6146	Advanced Remote Sensing And Image Processing	3
GEOLOGY 4831	Computational Geology	3

1. Only one of the listed courses may count toward completion of this certificate.

2. Only one of the listed courses may count toward completion of this certificate.

Justification for request

CIP Code: 290203

The graduate certificate in Geoanalytics and Geointelligence is designed to provide formalized education in the areas of geoanalytics, geospatial data analysis, and geointelligence. The certificate requires one course which provides a background in remote sensing and allows students to pick three additional courses among a variety of geoanalytic, intelligence, and numerical analysis offerings. Additionally, the Geosciences and Geological and Petroleum Engineering department can market the certificate and use it for branding to recruit more graduate students.

Supporting Documents

Approval Ltrs Grad CT in Geoanalytics and Geointelligence.pdf

MDHE Approvals DEC 2019.pdf

Course Reviewer Comments

Key: 351

Program Change Request

New Program Proposal

Date Submitted: 12/05/19 2:11 pm

Viewing: PROPOSED : Geoenvironmental Science and Engineering CT

File: 346

Last edit: 02/24/20 3:10 pm

Changes proposed by: sbrower

Start Term
Fall 2020
Program Code
PROPOSED
Department
Geosciences and Geological and Petroleum Engineering
Title
Geoenvironmental Science and Engineering CT

Program Requirements and Description

In Workflow

1. **RGEOSENG Chair**
2. **CCC Secretary**
3. **RBIOLSCI Chair**
4. **Sciences DSCC Chair**
5. **Engineering DSCC Chair**
6. **Pending CCC Agenda post**
7. CCC Meeting Agenda
8. Campus Curricula Committee Chair
9. FS Meeting Agenda
10. Faculty Senate Chair
11. Registrar
12. Kristy Giacomelli-Feys

Approval Path

1. 12/05/19 2:38 pm David Borrok (borrokd): Approved for RGEOSENG Chair
2. 12/11/19 11:38 am Brittany Parnell (ershenb): Approved for CCC Secretary
3. 12/11/19 1:56 pm David Duvernell (duvernelld): Approved for RBIOLSCI Chair
4. 12/17/19 3:01 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
5. 01/21/20 9:33 am Brittany Parnell (ershenb): Rollback to RGEOSENG

Chair for Engineering DSCC Chair

6. 02/24/20 3:09 pm Kristy Giacomelli-Feys (kristyg): Approved for RGEOSENG Chair
7. 02/24/20 3:10 pm Kristy Giacomelli-Feys (kristyg): Rollback to RGEOSENG Chair for CCC Secretary
8. 02/27/20 7:34 am David Borrok (borrokd): Approved for RGEOSENG Chair
9. 03/03/20 1:55 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
10. 03/03/20 1:58 pm David Duvernell (duvernelld): Approved for RBIOLSCI Chair
11. 03/11/20 11:34 am Katie Shannon (shannonk): Approved for Sciences DSCC Chair
12. 04/01/20 11:33 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

Geoenvironmental Science and Engineering

The graduate certificate in Geoenvironmental Science and Engineering is designed to provide graduate students with the geoscience and engineering backgrounds they will need to be successful in the geoenvironmental consulting or regulatory fields.

The Geoenvironmental Science and Engineering Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in Geology, Geophysics, Geological Engineering, Civil Engineering, or Biology or are currently accepted into a graduate degree program in one of these fields at Missouri S&T. Once admitted to the program, the student must take the four designated courses (provided in the

curriculum section). In order to receive a Graduate Certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given three years to complete the program.

Students admitted to the Geoenvironmental Science and Engineering Certificate Program will have non-degree graduate status, however, they will earn graduate credit for the courses they complete. If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to the non-thesis M.S. degree program in Geology and Geophysics. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degree. Students who do not have all of the prerequisite courses necessary to begin the courses in the Geoenvironmental Science and Engineering Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

One of the following courses is required:		
GEOLOGY 4411	Hydrogeology	3
GEO ENG 5331	Subsurface Hydrology	3
GEO ENG 5332	Fundamentals of Groundwater Hydrology	3
Three of the following courses are required:		
GEOLOGY 4431	Methods Of Karst Hydrogeology	3
GEOLOGY 4451	Aqueous Geochemistry	3
GEOPHYS 5782	Environmental and Engineering Geophysics	3
GEO ENG 5174	Geological Engineering Field Methods	3
GEO ENG 5233	Risk Assessment In Environmental Studies	3
GEO ENG 5235	Environmental Geological Engineering	3
GEO ENG 5237	Geological Aspects Of Hazardous Waste Management	3
GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
BIO SCI 6313	Environmental Microbiology	3
BIO SCI 6363	Advanced Freshwater Ecology	3
BIO SCI 6463	Bioremediation	3

Justification for request
CIP Code: 400603

The students targeted for this certificate are primarily on-campus graduate students already admitted to the Geology and Geophysics or Geological Engineering programs within GGPE. The purpose of the certificate is to provide graduate students in GGPE who are interested in environmental careers with a formal recognition of accomplishment in this area. The certificate will help to make students more marketable in this job sector. Additionally, the Geosciences and Geological and Petroleum Engineering department can market the certificate and use it for branding to recruit more graduate students.
Supporting Documents
Graduate Certificate in Geoenvironmental Science and Engineering 11 7 2018.pdf
MDHE approval.pdf
Course Reviewer Comments
ershenb (12/05/19 3:18 pm): formatting
ershenb (12/10/19 3:39 pm): attached MDHE approval
ershenb (12/11/19 1:52 pm): .

ershenb (01/21/20 9:33 am): Rollback: Rollback per email with Dr. Raper for new revisions.
ershenb (01/29/20 12:29 pm): formatting
kristyg (02/24/20 3:10 pm): Rollback: I inadvertently approved this through. I am rolling it back for your department.

Key: 346

Program Change Request

New Program Proposal

Date Submitted: 02/26/20 2:36 pm

Viewing: PROPOSED : Geologic Hazards Certificate

File: 350

Last edit: 02/26/20 2:36 pm

Changes proposed by: sbrower

Start Term
Fall 2020
Program Code
PROPOSED
Department
Geosciences and Geological and Petroleum Engineering
Title
Geologic Hazards Certificate

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 02/26/20 1:52 pm David Borrok (borrokd): Rollback to Initiator
2. 02/27/20 7:28 am David Borrok (borrokd): Approved for RGEOSENG Chair
3. 03/03/20 1:55 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
4. 04/01/20 11:34 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

The graduate certificate in Natural and Geologic Hazards is designed to provide graduate students with formalized education in the area of geologic hazards assessment and engineering.

The Geologic Hazards Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in Geology, Geophysics, Geological Engineering, Geotechnics, or Civil Engineering or who are currently accepted into a graduate degree program in one of these fields at Missouri S&T. Once admitted to the program, the student must take the four designated courses (provided in the curriculum section). In order to receive a Graduate Certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given three years to complete the program.

Students admitted to the Geologic Hazards Certificate Program will have non-degree graduate status, however, they will earn graduate credit for the courses they complete. If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to their choice of non-thesis M.S. degree programs in either Geological Engineering or Geotechnics. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degree. Students who do not have all of the prerequisite courses necessary to begin the courses in the Geologic Hazards Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

Required Course:		
GEO ENG 5441	Engineering Geology And Geotechnics	3
One of the following courses are required:		
GEO ENG 6441	Geotechnical Construction Practice	3
GEO ENG 6625	Applications in Geological Engineering	3
Two of the following courses are required:		
GEO ENG 5144	Remote Sensing Technology	3
GEO ENG 5146	Applications Of Geographic Information Systems	3
CIV ENG 5337	River Mechanics And Sediment Transport	3
GEO ENG 5471	Rock Engineering	3
CIV ENG 5716	Geotechnical Earthquake Engineering	3
GEO ENG 5782	Environmental and Engineering Geophysics	3
or GEO ENG 5761	Transportation Applications of Geophysics	
GEO ENG 6146	Advanced Remote Sensing And Image Processing	3
CIV ENG 6205	Structural Dynamics and Earthquake Engineering	3
GEO ENG 6477	Discontinuous Rock	3
CIV ENG 6717	Earth Dams And Related Problems	3

Justification for request

CIP Code: 143901

The graduate certificate in Natural and Geologic Hazards is designed to provide graduate students with formalized education in the area of geologic hazards assessment and engineering. The certificate requires two courses which provide a background in geological engineering, geology, and geotechnics, and allows students to pick two additional courses among a variety of hazard- and detection-oriented civil and geological engineering offerings. Additionally, the Geosciences and Geological and Petroleum Engineering department can market the certificate and use it for branding to recruit more graduate students.

Supporting Documents

Approval Ltrs Grad CT in Geologic Hazards.pdf

MDHE Approvals DEC 2019.pdf

Course Reviewer Comments

borrokd (02/26/20 1:52 pm): Rollback: attachments

Key: 350

Program Change Request

New Program Proposal

Date Submitted: 04/11/20 4:16 pm

Viewing: PROPOSED : Geological Engineering PhD

File: 355

Last edit: 04/11/20 4:16 pm

Changes proposed by: gertschl

Start Term
Fall 2020
Program Code
PROPOSED
Department
Geosciences and Geological and Petroleum Engineering
Title
Geological Engineering PhD

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 04/12/20 7:27 am David Borrok (borrokd): Approved for RGEOSENG Chair
2. 04/13/20 8:35 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:49 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

Both the PhD and DE programs consist of 90 credit hours beyond the BS degree or 60 credit hours beyond the MS degree. If these degrees are not in geological engineering or a related field, remedial courses may be required. No course below the 5000-level may be applied to the degree requirements. The schedule of course work, research, and/or engineering design is developed by the student in consultation with, and subject to the approval of, their advising committee. There is no foreign language requirement. Details of requirements for this program not covered here can be found in the Academic Program Procedures section of this catalog.

In addition to the course requirements and regardless of other degrees held, the PhD student must prepare and defend a comprehensive dissertation based on analytical, numerical, and/or experimental research on an important problem; their solution must add constructively to

the body of human knowledge. A minimum of 50% of the course work credit hours and the research credit hours completed during the PhD program must be in geological engineering. Enrollment in Geo Eng 6010 (Geological Engineering Graduate Seminar) is required for four semesters.

For a student with a MS degree, 30 credit hours from the MS program are accepted toward the PhD requirement. A student holding a BS degree and pursuing the PhD directly must complete 90 total credit hours.

For the self-motivated student with access to an appropriate research project, a geological engineering PhD can be earned online. This option is designed for working professionals who do not wish to take an extended leave of absence from their posts, such as in the military, government, and research sectors.

Justification for request

The Geological Engineering PhD program needs to be published in the catalog.

Supporting Documents

Course Reviewer Comments

Key: 355

Program Change Request

New Program Proposal

Date Submitted: 04/15/20 4:05 pm

Viewing: PROPOSED : Iron and Steel Metallurgy Certificate

File: 356

Last edit: 04/24/20 12:13 pm

Changes proposed by: smiller

Start Term
Fall 2020
Program Code
PROPOSED
Department
Materials Science & Engineering
Title
Iron and Steel Metallurgy Certificate

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 04/15/20 4:21 pm Greg Hilmas (ghilmas): Approved for RMATSENG Chair
2. 04/24/20 9:18 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 12:13 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

Missouri University of Science and Technology offers a graduate certificate in Iron and Steel Metallurgy for working professionals. The graduate certificate program consists of four courses from existing graduate-level courses. While the students admitted to the certificate program will have non-matriculated status, if they complete the four course sequence with a grade of B or better in each of the courses taken, they will be admitted to the master's degree program, if they so choose. The certificate credits taken by students admitted to the master’s program will count toward their master's degrees.

The Iron and Steel Metallurgy Certificate Program is open to all persons holding a bachelor's, master's, or doctorate degree in engineering, science, and/or mathematics and who have a minimum of one year of professional employment experience, or are currently accepted into a

graduate degree program at Missouri S&T. Once admitted to the program, the student must take the four designated courses. In order to receive a graduate certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given three years to complete the program.

A student admitted to the Iron and Steel Metallurgy Certificate Program will have non-degree graduate status; however, they will earn graduate credit for the courses they complete. If the four-course sequence is completed with a grade of B or better in each of the courses taken, the student, upon application, will be admitted to the master's degree program sponsoring the graduate certificate, provided that all other program prerequisites and admission requirements are met. The certificate credits taken by the student admitted to the master's degree program will count toward their master's degree. Students who do not have all of the prerequisite courses necessary to begin the courses in the Iron and Steel Metallurgy Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

Students enrolled in this certificate will take one required course and three elective courses.

Choose one required course from the following:

MET ENG 5450 Advanced Steelmaking ()

MET ENG 6320 Advanced Steels and Their Treatment ()

Choose three courses from the following:

MET ENG 5230 Advanced Corrosion And Its Prevention ()

MET ENG 5440 Metal Deformation Processes ()

MET ENG 5450 Advanced Steelmaking ()

MET ENG 5470 Ferrous Metals Casting ()

MET ENG 6320 Advanced Steels and Their Treatment ()

MS&E 6130 Kinetic Theory for Materials ()

Note: MET ENG 5450 and MET ENG 6320 can be taken as the required course or as an elective, but not both.

Justification for request

CIP Code: 142001

The graduate certificate in Iron and Steel Metallurgy is designed to provide working professionals and graduate-level students with advanced insights into the fundamental processes and mechanisms in the production, casting, rolling, forging and heat treatments of ferrous materials. The certificate can be marketed by the Materials Science and Engineering department to increase enrollment in the graduate courses with distance offerings and to recruit additional Master's degree students to the department.

Supporting Documents

MS&T PC Nov 2019.pdf

Course Reviewer Comments

sraper (04/24/20 12:13 pm): Changed first sentence in description from "Advanced Engineering Materials" to Iron and Steel Metallurgy with approval from program.

Key: 356

Program Change Request

New Program Proposal

Date Submitted: 04/15/20 4:05 pm

Viewing: PROPOSED : Materials for Extreme Environments Certificate

File: 357

Last edit: 04/15/20 4:05 pm

Changes proposed by: smiller

Start Term
Fall 2020
Program Code
PROPOSED
Department
Materials Science & Engineering
Title
Materials for Extreme Environments Certificate

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 04/15/20 4:21 pm Greg Hilmas (ghilmas): Approved for RMATSENG Chair
2. 04/24/20 9:18 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 12:13 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

Missouri University of Science and Technology offers a graduate certificate Materials for Extreme Environments for working professionals. The graduate certificate program consists of four courses from existing graduate-level courses. While the students admitted to the certificate program will have non-matriculated status, if they complete the four course sequence with a grade of B or better in each of the courses taken, they will be admitted to the master's degree program, if they so choose. The certificate credits taken by students admitted to the master’s program will count toward their master's degrees.

The Materials for Extreme Environments Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in Engineering, Science, and/or Mathematics and who have a minimum of one year of professional employment experience, or are currently accepted into a

graduate degree program at Missouri S&T. Once admitted to the program, the student must take the four designated courses (provided in the curriculum section). In order to receive a Graduate Certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given three years to complete the program.

A student admitted to the Materials for Extreme Environments Certificate Program will have non-degree graduate status, however, they will earn graduate credit for the courses they complete. If the four-course sequence is completed with a grade of B or better in each of the courses taken, the student, upon application, will be admitted to the Master's degree program sponsoring the graduate certificate, provided that all other program prerequisites and admission requirements are met. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degrees. Students who do not have all of the prerequisite courses necessary to begin the courses in the Materials for Extreme Environments Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

Students enrolled in this certificate will take one required course and three elective courses.

Required Course"

MET ENG 5810 Principles Of Engineering Materials ()

Any three of the following courses:

CER ENG 5250 Refractories ()

CER ENG 6230 Composite Materials ()

MS&E 5220 Advanced Phase Equilibria ()

MET ENG 5170 Nuclear Materials I ()

MET ENG 5230 Advanced Corrosion And Its Prevention ()

MECH ENG 5212 Introduction to Finite Element Analysis ()

Justification for request
CIP Code: 141801
The graduate certificate in Materials for Extreme Environments would provide working professionals and graduate level students with advanced insights into the fundamentals and characteristics of materials produced for service in extreme environments and the degradation mechanisms involved in service. The certificate can be marketed by the Materials Science and Engineering department to increase enrollment in the graduate courses with distance offerings and to recruit additional Master's degree students to the department.
Supporting Documents
MS&T PC Nov 2019.pdf
Course Reviewer Comments

Key: 357

Program Change Request

New Program Proposal

Date Submitted: 03/09/20 10:41 am

Viewing: PROPOSED : Space Resources Certificate

File: 353

Last edit: 03/24/20 1:56 pm

Changes proposed by: borrokd

Start Term
Fall 2020
Program Code
PROPOSED
Department
Geosciences and Geological and Petroleum Engineering
Title
Space Resources Certificate

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 03/15/20 3:55 pm David Borrok (borrokd): Approved for RGEOSENG Chair
2. 03/23/20 9:30 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/01/20 11:34 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

The graduate certificate program in Space Resources is designed to provide a pathway for non-aerospace engineering professionals to enter the emerging field of space-based resource discovery and production.

The Space Resources Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in, Geological Engineering, Geotechnics, Civil Engineering, Mining Engineering, Ceramic Engineering, Chemical Engineering, Metallurgical Engineering or Aerospace Engineering or who are currently accepted into a graduate degree program in one of these fields at Missouri S&T. Once admitted to the program, the student must take the four designated courses (provided in the curriculum section). In order to receive a Graduate Certificate,

the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given three years to complete the program.

Students admitted to the Space Resources Certificate Program will have non-degree graduate status, however, they will earn graduate credit for the courses they complete. If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to their choice of graduate degree programs in either Geological Engineering or Geotechnics. Admission to other engineering programs will be at the discretion of those programs. The certificate credits taken by the students admitted to the graduate degree program will count towards their degree. Students who do not have all of the prerequisite courses necessary to begin the courses in the Space Resources Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

The following course is required:		
GEO ENG 5810	Fundamentals of Space Resources	
One of the following Space Mechanics courses is required:		
AERO ENG 3613	Aerospace Mechanics I	3
AERO ENG 5313	Intermediate Dynamics of Mechanical and Aerospace Systems	3
Once of the following Exploration courses is required:		
GEO ENG 5144	Remote Sensing Technology	3
GEO ENG 5443	Subsurface Exploration	3
GEOLOGY 4731	Astronomy and Planetary Science	3
One of the following Processing courses is required:		
CHEM ENG 4110	Chemical Engineering Process Dynamics And Control	3
CHEM ENG 5110	Intermediate Chemical Reactor Design	3
CHEM ENG 5190	Plantwide Process Control	3
MS&E 6120	Thermodynamics and Phase Equilibria	3

Justification for request

CIP Code: 143901

The students targeted for this certificate will initially be on-campus graduate students already admitted into the relevant engineering graduate programs but we anticipate expanding on-line offerings to additionally target off-campus students. The purpose of the certificate is to provide engineering graduate students who are interested in earth-materials and aerospace careers with a formal recognition of accomplishment in this area. The certificate will help to make students more marketable in this job sector. Additionally, the Geosciences and Geological and Petroleum Engineering department can market the certificate and use it for branding to recruit more graduate students.

Supporting Documents

App Ltrs Space Resources.pdf

MDHE Approvals DEC 2019.pdf

Course Reviewer Comments

sraper (03/24/20 1:56 pm): Corrected "Spaces" in title to "Space" verified by Dr. Borrack.

Key: 353

Program Change Request

New Program Proposal

Date Submitted: 02/26/20 3:11 pm

Viewing: PROPOSED : Subsurface Water Resources

File: 352

Last edit: 02/26/20 3:11 pm

Changes proposed by: sbrower

Start Term
Fall 2020
Program Code
PROPOSED
Department
Geosciences and Geological and Petroleum Engineering
Title
Subsurface Water Resources

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 02/27/20 7:28 am David Borrok (borrokd): Approved for RGEOSENG Chair
2. 03/03/20 1:55 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/01/20 11:34 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

The graduate certificate in Subsurface Water Resources is designed to provide formalized education in the area of subsurface water resource engineering, with emphasis on groundwater extraction, protection, and remediation

The Subsurface Water Resources Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in Geology, Geophysics, Geological Engineering, Geotechnics, or Civil Engineering or who are currently accepted into a graduate degree program in one of these fields at Missouri S&T. Once admitted to the program, the student must take the four designated courses (provided in the curriculum section). In order to receive a Graduate Certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given three years to complete the program.

Students admitted to the Subsurface Water Resources Certificate Program will have non-degree graduate status, however, they will earn graduate credit for the courses they complete. If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to their choice of non-thesis M.S. degree programs in either Geological Engineering or Geotechnics. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degree. Students who do not have all of the prerequisite courses necessary to begin the courses in the Subsurface Water Resources Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

Required Courses:		
GEO ENG 5331	Subsurface Hydrology	3
or GEO ENG 5332	Fundamentals of Groundwater Hydrology	
or GEOLOGY 4411	Hydrogeology	
And		
GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
Two of the following courses are required:		
GEOLOGY 4431	Methods Of Karst Hydrogeology	3
GEOLOGY 4451	Aqueous Geochemistry	3
GEO ENG 5233	Risk Assessment In Environmental Studies	3
GEO ENG 5443	Subsurface Exploration	3
CIV ENG 5630	Remediation of Contaminated Groundwater and Soil	3
CIV ENG 5635	Phytoremediation and Natural Treatment Systems: Science and Design	3
CIV ENG 5640	Environmental Law And Regulations	3
GEO ENG 5782	Environmental and Engineering Geophysics	3
GEO ENG 6331	Advanced Subsurface Hydrology	3

Justification for request

CIP Code: 140805

The purpose of the certificate is to provide the students in GGPE who are interested in careers in water management or groundwater remediation a formal recognition of this accomplishment. A certificate in Subsurface Water Resources will give students an advantage when applying for careers in environmental consulting, water resource management, and other fields. Additionally, the Geosciences and Geological and Petroleum Engineering department can market the certificate and use it for branding to recruit more graduate students.

Supporting Documents

App Ltrs Subsurface Water Resources.pdf

MDHE Approvals DEC 2019.pdf

Course Reviewer Comments

Key: 352

Program Change Request

Date Submitted: 02/03/20 3:14 pm

Viewing: PSYCH-BA : Psychology BA

File: 192.36

Last approved: 06/14/19 2:14 pm

Last edit: 02/03/20 3:14 pm

Changes proposed by: burnsde

Catalog Pages Using this Program
Psychology_

Start Term
Fall **2020** ~~2019~~
Program Code
PSYCH-BA
Department
Psychological Science
Title
Psychology BA

Program Requirements and Description

In Workflow

1. **RPSYCHOL Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 10/03/19 11:12 am Susan Murray (murray): Rollback to Initiator
2. 02/03/20 1:26 pm Susan Murray (murray): Approved for RPSYCHOL Chair
3. 02/03/20 2:26 pm Brittany Parnell (ershenb): Rollback to Initiator
4. 04/01/20 11:03 am Susan Murray (murray): Approved for RPSYCHOL Chair
5. 04/03/20 3:22 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
6. 04/23/20 4:33 pm Kristy Giacomelli-Feys (kristyg): Approved for Social

Sciences DSCC Chair

History

1. Aug 4, 2014 by nstone
2. Mar 20, 2015 by nstone
3. Jun 19, 2015 by nstone
4. Jul 21, 2015 by pantaleoa
5. Jun 28, 2017 by Nathan Weidner (weidnern)
6. Jun 14, 2019 by Susan Murray (murray)

Bachelor of Arts Psychology

A minimum of 120 credit hours is required for a bachelor of arts degree in psychology and an average of at least two grade points per credit hour must be obtained. The psychology B.A. ~~curriculum requires 23 hours of basic skills andconcepts.That is, 6 hours of English Composition, 6 hours of western civilization, and 11-16 hours of foreignlanguage.12 semester hours in humanities must be taken with at least one course taken in each of the three areas of literature (English and American), philosophy, and fine arts (art, music and theater), but not to include studio and performanceofferings.A minimum of 12 semester hours is required in social sciences in at least two of the following threeareas:economics, political science, andhistory.~~**curriculum requires 6** ~~A minimum of 12~~ hours of **English Composition, 14** ~~math and science are required and a minimum of 34~~ hours **of math and science, 12 semester hours** ~~are required~~ in **humanities, 12 semester hours is required in social sciences, 11-16 hours of foreign language and a minimum of 35 hours are required in** psychology. Up to 12 credit hours of advanced ROTC may be credited toward the degree. Specific requirements for the bachelor of arts degree are outlined in the sample program listed below.

1. ENGLISH 1120 and one additional three hour composition course (6 hours).
2. Western civilization (HISTORY 1100 and HISTORY 1200) (6 hours).
3. Foreign languages for at least 3 semesters of basic study in French, German, Russian, Spanish or an approved substitute; or one year of basic study in a foreign language in either French, German, Russian, Spanish, or an approved **substitute,** ~~substitute ,~~ and a humanities or social sciences course taught in a foreign country and employing the language of that country; or one year of basic study in each of two of the foreign languages of French, German, Russian or Spanish or an approved substitute (11-16 hours).
4. Sciences. At least one course taken in biological (biological sciences) and physical (chemistry, geology and geophysics, physics) sciences. ~~At least one statisticscourse.~~A laboratory course is required (and a lab offered in engineering also may count at the discretion of the student's major advisor) toward the total **requirement.** ~~requirement (12 hours).~~ **Stat 1115 is required, and an additional elective in Science or Math (14 hours).**
5. Humanities and fine arts. Courses used to satisfy this requirement must include one course in each of the three areas of literature (English or American), philosophy, and fine arts (art, music or theater), but not to include studio and performance offerings (12 hours).
6. Social Sciences. At least two of the following social science areas are to be included: economics, political science, or history **(6** ~~(12~~ hours).

7. Psychology Courses (35 hours)

Required:*		
General Skills Courses:		
PSYCH 1100	Introduction to Psychology	1
PSYCH 1101	General Psychology	3
PSYCH 2200	Research Methods	4
Content Courses:		
PSYCH 3310	Developmental Psychology	3
PSYCH 4400	Cognitive Psychology	3
PSYCH 4501	Abnormal Psychology	3
PSYCH 4600	Social Psychology	3
And one of the following 2 courses:		
PSYCH 4410	Neuroscience	3
PSYCH 4411	Sensation and Perception	3
Capstone Course:		
Select three credit hours from the Capstone courses:		
PSYCH 4010	Seminar	0-6
PSYCH 4099	Undergraduate Research	0-6
PSYCH 4200	Tests and Measurements	3
PSYCH 4590	Health Psychology	3
PSYCH 4994	Psychology in Media	3
PSYCH 4992	Cross-Cultural Psychology	3
PSYCH 4993	Psychology of Gender	3
PSYCH 4990	Internship	0-6
*These required courses total 26 hours.		
Elective Courses:		
Select an additional 9 hours of psychology electives to complete the 35 hour degree requirement.		

8. Major-field requirements: A cumulative grade point average of 2.0 must be earned in all course work taken in the major field. Upper-class (3000-4000-level) courses completed with grades of "D" may not be included in the course work for the major field without the approval of the chair of the department. At least nine hours of upper-class work in the major field must be completed in residence at Missouri S&T.
9. Minor: A minor will be selected from any discipline other than the major with the approval of the student's advisor. A total of at least 15 hours is required for the minor, but may include courses which also satisfy other requirements. At least nine hours must be beyond the introductory level. A cumulative grade point average of 2.0 must be earned in all course work required in the minor field. At least six hours of work in the minor field must be completed in residence at Missouri S&T.
10. Basic ROTC may be elected in the freshman and sophomore years, but is not creditable toward a degree. Up to 12 credit hours of advanced ROTC may be credited toward a degree.
11. Elective Credits: In consultation with his/her advisor, each student will elect sufficient additional courses to complete a minimum of 120 credit hours.

Emphasis Areas

Note: The following areas identify courses from which a student may opt to develop an emphasis area. It is not required that students obtain an emphasis specialty within psychology.

Human Resources/Personnel		
PSYCH 4700	Industrial Psychology	3
PSYCH 4600	Social Psychology	3
PSYCH 4601	Group Dynamics	3
PSYCH 4602	Organizational Psychology	3
Human Services		
PSYCH 3311	Psychological & Educational Development Of The Adolescent	3
or PSYCH 3310	Developmental Psychology	
PSYCH 4501	Abnormal Psychology	3
PSYCH 4500	Personality Theory	3
PSYCH 4510	Clinical Psychology	3
Cognitive Neuroscience		
PSYCH 4411	Sensation and Perception	3
PSYCH 3400	Theories Of Learning	3
or PSYCH 4501	Abnormal Psychology	
PSYCH 4400	Cognitive Psychology	3
PSYCH 4410	Neuroscience	3
Usability of Technology		
PSYCH 2300	Educational Psychology	3
PSYCH 4710	Human Factors	3
PSYCH 4720	Psychology of Social Technology	3
Psychology of Leadership		
PSYCH 4600	Social Psychology	3
or PSYCH 4603	Social Influence: Science and Practice	
PSYCH 4610	Psychology of Leadership in Organizations	3
PSYCH 4993	Psychology of Gender	3
or PSYCH 4601	Group Dynamics	
PSYCH 4602	Organizational Psychology	3

Bachelor of Arts Psychology (Secondary Education Emphasis Area)

You may earn a B.A. degree in psychology from Missouri S&T and certification to teach at the secondary level in the schools of Missouri with the secondary education emphasis area program. This program can be completed in four academic years and student teaching is arranged with public schools within 30 miles of the Rolla campus.

Students interested in this emphasis area should consult with the advisor for the secondary education emphasis area in the department of psychological science.

In order to successfully complete this emphasis area, students must have at least 22 on the ACT, maintain a cumulative GPA of at least 2.5, and attain at least a 2.5 GPA in psychology courses taken. Current Missouri S&T or transfer students who wish to pursue this emphasis area must meet both of these GPA requirements to be accepted into the program. Students must also meet all requirements listed under the teacher education program in this catalog. Students who do not meet all the teacher certification requirements will not be eligible for the secondary education emphasis area, even if they have completed all course work.

A degree with this emphasis area requires **125** ~~128~~ credit hours. The required courses are provided below.

Communications Skills: 6 semester hours		
ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 1160	Writing And Research	3
~~SP&M S 1185~~	~~Principles Of Speech~~	~~3~~
Humanities: 12 semester hours		
Art, Music, or Theatre course		3
Philosophy course		3
Literature course		3
One additional humanities from the above course groups, Foreign Language, or Etymology		3
Social Sciences: 21 semester hours		
HISTORY 1300	American History To 1877	3
HISTORY 1310	**American History Since 1877**	**3**
POL SCI 1200	American Government	3
POL SCI 3211	American Political Parties	3
or POL SCI 3300	Principles Of Public Policy	
or POL SCI 3760	The American Presidency	
or POL SCI 3763	Contemporary Political Thought	
PSYCH 1101	General Psychology	3
ECON 1100	Principles Of Microeconomics	3
or ECON 1200	Principles Of Macroeconomics	
Geography		3
Natural Science/Mathematics: 12 semester hours		
One course in Physics, Chemistry or Geology		3
Mathematics 1120, 1103, 1140+		3
STAT 1115	Statistics For The Social Sciences I	3
BIO SCI 1113	General Biology	3
Professional Requirements: 26 semester hours		
EDUC 1040	Perspectives In Education	2
EDUC 1174	School Organization and Administration For Teachers	2
EDUC 2251	Historical Foundation Of American Education	3
EDUC 3216	Teaching Reading in Content Area	3
EDUC 3280	Teaching Methods and Skills in Content Areas	6
EDUC 4298	Student Teaching Seminar	1

PSYCH 2300	Educational Psychology	3
PSYCH 3311	Psychological & Educational Development Of The Adolescent	3
PSYCH 4310	Psychology Of The Exceptional Child	3
Clinical Experience: 16 semester hours		
EDUC 1104	Teacher Field Experience I	2
EDUC 1164	Teacher Field Experience II	2
EDUC 4299	Student Teaching	12
Psychology Degree Requirements: 17 semester hours		
PSYCH 1100	Introduction to Psychology	1
PSYCH 2200	Research Methods	4
PSYCH 3400	Theories Of Learning	3
PSYCH 3310	Developmental Psychology	3
PSYCH 4501	Abnormal Psychology	3
or PSYCH 4500	Personality Theory	
PSYCH 4600	Social Psychology	3
Certification: 15 semester hours		
6 hours of American History from the following:		
HISTORY 3320	Colonial America	
HISTORY 3325	Revolutionary America, 1754-1789	
HISTORY 3340	Age Of Jefferson And Jackson	
HISTORY 3345	Civil War And Reconstruction	
HISTORY 3360	Recent United States History	
HISTORY 3425	History Of The Old South	
HISTORY 3426	History Of The Modern South	
HISTORY 3480	History Of Baseball	
HISTORY 3440	20th Century Americans In Combat	
HISTORY 3442	The United States in Vietnam	
HISTORY 3761	U.S. Diplomatic History to World War II	
HISTORY 4435	History of the American West	
9 hours of World History from the following:		
HISTORY 1100	Early Western Civilization	
HISTORY 1200	Modern Western Civilization	
HISTORY 2220	Making Of Modern Britain	
HISTORY 2222	The Making Of Modern France	
HISTORY 2224	Making Of Modern Russia	
HISTORY 3130	Medieval History I	
HISTORY 3135	Medieval History II	
HISTORY 3140	History Of Renaissance Thought	
HISTORY 3230	Europe In The Age Of The French Revolution And Napoleon	

HISTORY 3235	Foundations Of Contemporary Europe 1815-1914
HISTORY 3240	Contemporary Europe
HISTORY 3660	Modern East Asia

Justification for request

Fixing a few errors, reducing number of required courses to get closer to 120 hrs.

Supporting Documents

Course Reviewer Comments

ershenb (10/03/19 10:48 am): updated start term to fall 2020

murray (10/03/19 11:12 am): Rollback: Please remove the 2200 material but keep the grammar changes. - Thanks

ershenb (02/03/20 2:26 pm): Rollback: rollback request per email from Dr. Burns.

Key: 192

Program Change Request

Date Submitted: 02/03/20 3:07 pm

Viewing: PSYCH-BS : Psychology BS

File: 193.32

Last approved: 06/14/19 2:14 pm

Last edit: 02/03/20 3:07 pm

Changes proposed by: burnsde

Catalog Pages Using this Program
Psychology_

Start Term
Fall **2020** ~~2019~~
Program Code
PSYCH-BS
Department
Psychological Science
Title
Psychology BS

Program Requirements and Description

In Workflow

1. **RPSYCHOL Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 10/03/19 11:13 am Susan Murray (murray): Rollback to Initiator
2. 04/01/20 11:03 am Susan Murray (murray): Approved for RPSYCHOL Chair
3. 04/03/20 3:22 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
4. 04/23/20 4:33 pm Kristy Giacomelli-Feys (kristyg): Approved for Social Sciences DSCC Chair

History

1. May 6, 2014 by nstone
2. Jul 8, 2014 by pantaleoa

3. Jul 8, 2014 by pantaleoa
4. Mar 20, 2015 by nstone
5. Jun 19, 2015 by nstone
6. Jul 21, 2015 by pantaleoa
7. Jun 28, 2017 by Nathan Weidner (weidnern)
8. Jun 14, 2019 by Susan Murray (murray)

Bachelor of Science
Psychology

A minimum of 120 credit hours is required for a bachelor of science degree in psychology and a cumulative grade point average of 2.0 must be obtained. These requirements for the B.S. degree are in addition to credit received for basic ROTC.

The psychology bachelor of science curriculum requires six hours of English composition; **20** ~~23~~ hours of math, science and computer science; **twelve semester hours in the humanities;** and **twelve semester hours in the social sciences.** ~~twelve semester hours in humanities.~~ Specific requirements for the bachelor degree are outlined in the sample program listed below.

1. ENGLISH 1120 and ENGLISH 1160 (entering students will normally take ENGLISH 1120 either semester of the first year.) (6 hours)
2. A total of 20 hours in biological, physical, (chemistry, geology and geophysics, and physics), and mathematical (mathematics/statistics and computer science or information science & technology) sciences, to include at least one course taken in the biological and one in the physical sciences. Of the biological and physical science offerings, at least one must be a laboratory course. **Stat 1115 is required.** Engineering courses may, at the discretion of the student's major advisor, also count toward this total requirement. (20 hours)
3. 12 hours in humanities and fine arts (literature, philosophy, art, music, or theater). Foreign language courses may count toward fulfilling this requirement. Courses used to satisfy this requirement must be taken in at least two humanities areas. (12 hours)
4. 12 hours in at least two social sciences fields outside the major area (economics or history or political science). A course in Modern Western Civilization (HISTORY 1200), American History To 1877 (HISTORY 1300) or American History Since 1877 (HISTORY 1310), or American Government (POL SCI 1200) must be taken to satisfy the requirement of the state of Missouri (the "Williams Law"), and this course may count toward fulfilling the social sciences requirement. (12 hours)
5. Minor: A minor will be selected from any discipline other than the major with the approval of the student's advisor. A total of at least 15 hours is required for the minor, but may include courses which also satisfy other requirements. At least nine hours must be beyond the introductory level.
6. Basic ROTC may be elected in the freshman and sophomore years, but is not creditable toward a degree. Six credit hours of advanced ROTC may be credited toward a degree.
7. Elective Credits: In consultation with his/her advisor, each student will elect sufficient additional courses to complete a minimum of 120 credit hours which may include MATH 1160 and one of MATH 1120 or MATH 1140 .
8.

Psychology Courses (35 hours)		
Required:*		
General Skills Courses:		
PSYCH 1100	Introduction to Psychology	1

PSYCH 1101	General Psychology	3
PSYCH 2200	Research Methods	4
Content Courses:		
PSYCH 3310	Developmental Psychology	3
PSYCH 4400	Cognitive Psychology	3
PSYCH 4501	Abnormal Psychology	3
PSYCH 4600	Social Psychology	3
And one of the following 2 courses:		
PSYCH 4410	Neuroscience	3
PSYCH 4411	Sensation and Perception	3
Capstone Course:		
Select three credit hours from the following Capstone courses:		
PSYCH 4010	Seminar	0-6
PSYCH 4099	Undergraduate Research	0-6
PSYCH 4200	Tests and Measurements	3
PSYCH 4590	Health Psychology	3
PSYCH 4994	Psychology in Media	3
PSYCH 4992	Cross-Cultural Psychology	3
PSYCH 4993	Psychology of Gender	3
PSYCH 4990	Internship	0-6
*These required courses total 26 hours.		
Elective Courses:		
Select an additional 9 hours of psychology electives to complete the 35 hour degree requirement.		

9. A cumulative grade point average of 2.0 must be earned in all course work taken in the major field. Upper class (3000-level and above) courses completed with grades of “D” may not be included in the course work for the major field without the approval of the advisor and the chair of the department concerned.

Emphasis Areas

Note: The following areas identify courses from which a student may opt to develop an emphasis area. It is not required that students obtain an emphasis specialty within psychology.

Human Resources/Personnel		
PSYCH 4700	Industrial Psychology	3
PSYCH 4600	Social Psychology	3
PSYCH 4601	Group Dynamics	3
PSYCH 4602	Organizational Psychology	3
Human Services		
PSYCH 3311	Psychological & Educational Development Of The Adolescent	3
or PSYCH 3310	Developmental Psychology	
PSYCH 4501	Abnormal Psychology	3
PSYCH 4500	Personality Theory	3

PSYCH 4510	Clinical Psychology	3
Cognitive Neuroscience		
PSYCH 4411	Sensation and Perception	3
PSYCH 3400	Theories Of Learning	3
or PSYCH 4501	Abnormal Psychology	
PSYCH 4400	Cognitive Psychology	3
PSYCH 4410	Neuroscience	3
Usability of Technology		
PSYCH 2300	Educational Psychology	3
PSYCH 4710	Human Factors	3
PSYCH 4720	Psychology of Social Technology	3
Psychology of Leadership		
PSYCH 4600	Social Psychology	3
or PSYCH 4603	Social Influence: Science and Practice	
PSYCH 4610	Psychology of Leadership in Organizations	3
PSYCH 4993	Psychology of Gender	3
or PSYCH 4601	Group Dynamics	
PSYCH 4602	Organizational Psychology	3

Bachelor of Science Psychology (Secondary Education Emphasis Area)

You may earn a B.S. degree in psychology from Missouri S&T and certification to teach at the secondary level in the schools of Missouri with the secondary education emphasis area program. This program can be completed in four academic years and student teaching is arranged with public schools within 30 miles of the Rolla campus.

Students interested in this emphasis area should consult with the advisor for the secondary education emphasis area in the department of psychological science.

In order to successfully complete this emphasis area, students must have at least 22 on the ACT, maintain a cumulative GPA of at least 2.5, and attain at least a 2.5 GPA in psychology courses taken. Current Missouri S&T or transfer students who wish to pursue this emphasis area must meet both of these GPA requirements to be accepted into the program. Students must also meet all requirements listed under the teacher education program in this catalog. Students who do not meet all the teacher certification requirements will not be eligible for the secondary education emphasis area, even if they have completed all course work.

A degree in this emphasis area requires **128** ~~136~~ credit hours. The required courses are provided below.

Communications Skills: 3 semester hours		
ENGLISH 1120	Exposition And Argumentation	3
~~ENGLISH 1160~~	~~Writing And Research~~	~~3~~
~~SP&M S 1185~~	~~Principles Of Speech~~	~~3~~
Humanities: 12 semester hours		
Art, Music, or Theatre course		3
Philosophy course		3

Literature course		3
One additional humanities from the above course groups, Foreign Language, or Etymology		3-4
Social Sciences: 21 semester hours		
HISTORY 1300	American History To 1877	3
HISTORY 1310	**American History Since 1877**	**3**
POL SCI 1200	American Government	3
POL SCI 3211	American Political Parties	3
or POL SCI 3300	Principles Of Public Policy	
or POL SCI 3760	The American Presidency	
or POL SCI 3763	Contemporary Political Thought	
PSYCH 1101	General Psychology	3
ECON 1100	Principles Of Microeconomics	3
or ECON 1200	Principles Of Macroeconomics	
HISTORY 2110	World Regional Geography	3
Natural Sciences/Mathematics: 18 semester hours		
One course in Physics, Chemistry or Geology		3
Mathematics 1120, 1130, 1140+		3
BIO SCI 1113	General Biology	3
STAT 1115	Statistics For The Social Sciences I	4
~~COMP SCI 1570 & COMP SCI 1580~~	~~Introduction To C++ Programming and Introduction To Programming Laboratory~~	~~3-4~~
~~or COMP SCI 1970 & COMP SCI 1980~~	~~Basic Scientific Programming and Computer Programming Laboratory~~	
~~or COMP SCI 1971 & COMP SCI 1981~~	~~Introduction To Programming Methodology and Programming Methodology Laboratory~~	
~~or COMP SCI 1972 & COMP SCI 1982~~	~~Introduction to MATLAB Programming and MATLAB Programming Laboratory~~	
~~5-6 additional hours of Math &/or Science courses~~		~~5-6~~
5 additional hours of Math &/or Science courses		**5**
Professional Requirements: 26 semester hours		
EDUC 1040	Perspectives In Education	2
EDUC 1174	School Organization and Administration For Teachers	2
EDUC 2251	Historical Foundation Of American Education	3
EDUC 3216	Teaching Reading in Content Area	3
EDUC 3280	Teaching Methods and Skills in Content Areas	6
EDUC 4298	Student Teaching Seminar	1
PSYCH 2300	Educational Psychology	3
PSYCH 3311	Psychological & Educational Development Of The Adolescent	3
PSYCH 4310	Psychology Of The Exceptional Child	3
Clinical Experience: 16 semester hours		

EDUC 1104	Teacher Field Experience I	2
EDUC 1164	Teacher Field Experience II	2
EDUC 4299	Student Teaching	12
Psychology Degree Requirements: 17 semester hours		
PSYCH 1100	Introduction to Psychology	1
PSYCH 2200	Research Methods	4
PSYCH 3400	Theories Of Learning	3
PSYCH 3310	Developmental Psychology	3
PSYCH 4501	Abnormal Psychology	3
or PSYCH 4500	Personality Theory	
PSYCH 4600	Social Psychology	3
Certification: 15 semester hours		
6 hours of American History from the following:		
HISTORY 3320	Colonial America	
HISTORY 3325	Revolutionary America, 1754-1789	
HISTORY 3340	Age Of Jefferson And Jackson	
HISTORY 3345	Civil War And Reconstruction	
HISTORY 3360	Recent United States History	
HISTORY 3425	History Of The Old South	
HISTORY 3426	History Of The Modern South	
HISTORY 3480	History Of Baseball	
HISTORY 3440	20th Century Americans In Combat	
HISTORY 3442	The United States in Vietnam	
HISTORY 3761	U.S. Diplomatic History to World War II	
HISTORY 4435	History of the American West	
9 hours of World History from the following:		
HISTORY 1100	Early Western Civilization	
HISTORY 1200	Modern Western Civilization	
HISTORY 2220	Making Of Modern Britain	
HISTORY 2222	The Making Of Modern France	
HISTORY 2224	Making Of Modern Russia	
HISTORY 3130	Medieval History I	
HISTORY 3135	Medieval History II	
HISTORY 3140	History Of Renaissance Thought	
HISTORY 3230	Europe In The Age Of The French Revolution And Napoleon	
HISTORY 3235	Foundations Of Contemporary Europe 1815-1914	
HISTORY 3240	Contemporary Europe	
HISTORY 3660	Modern East Asia	

Justification for request

We reduced the number of courses necessary for the secondary ed degree and made corrected other previous errors.

Supporting Documents

Course Reviewer Comments

ershenb (10/03/19 10:48 am): updated start term to fall 2020

murray (10/03/19 11:13 am): Rollback: as you know we are not changing 2200

Key: 193

Program Change Request

Date Submitted: 04/01/20 11:04 am

Viewing: PSYMTRP-CT : Statistical Methods Psych CT

File: 305.2

Last approved: 06/13/19 9:19 am

Last edit: 04/03/20 3:22 pm

Changes proposed by: burnsde

Catalog Pages Using this Program
Psychology

Start Term
Fall **2020** ~~2019~~
Program Code
PSYMTRP-CT
Department
Psychological Science
Title
Statistical Methods Psych CT

Program Requirements and Description

In Workflow

1. **RPSYCHOL Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 04/01/20 11:05 am Susan Murray (murray): Approved for RPSYCHOL Chair
2. 04/03/20 3:22 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/23/20 4:33 pm Kristy Giacomelli-Feys (kristyg): Approved for Social Sciences DSCC Chair

History

1. Jun 13, 2019 by Brittany Parnell (ershenb)

Statistical Methods in Psychology

This certificate program is designed to provide formalized education in the area of psychometrics. Psychometrics is the field of study concerned with the theory and technique of psychological measurement and includes the measurement of knowledge, abilities, attitudes, and personality traits. The field is primarily concerned with the study of differences between individuals and involves two major research tasks: (1) the construction of instruments and procedures for measurement; and (2) the development and refinement of theoretical approaches to measurement. After being admitted to the program, a student must take two courses from a group of three and an additional two courses from a second group of three.

The following two psychology courses will be required:

PSYCH 5201	Psychometrics
PSYCH 5202	Applied Psychological Data Analysis

And an additional two statistics courses chosen from these four:

STAT 5346	Regression Analysis
STAT 5353	Statistical Data Analysis
STAT 5643	Probability And Statistics
STAT 6344	Design And Analysis Of Experiments

Admissions requirements for the statistical methods in psychology certificate are available at https://psych.mst.edu/graduate/gradpsych/admission/

~~The psychometrics certificate program is open to all persons holding a bachelors, masters, orPh.D.degree and who have the required pre-requisites for the coursesoffered.In order to receive a graduate certificate, the student must have an average cumulative grade of 3.0 or better in the certificatecourses.~~Students admitted to the certificate program will have a non-matriculated status as a graduate student. If they complete each of the four courses with a grade of B or better, they may be admitted to the Missouri S&T master's degree program in industrial-organizational psychology or mathematics and statistics if they apply and meet the program requirements. Students who do not have all of the prerequisite courses necessary to take a course in the certificate program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

Justification for request

put in weblink for admissions requirements

Supporting Documents

Course Reviewer Comments

kristyg (04/03/20 3:22 pm): Updated effective date term to Fall 2020

Key: 305

Program Change Request

Date Submitted: 04/02/20 8:57 pm

Viewing: STRENG-CT : Contemporary Struct Engr CT

File: 275.2

Last approved: 06/13/19 9:46 am

Last edit: 04/02/20 8:57 pm

Changes proposed by: burken

Catalog Pages Using this Program
Civil, Architectural, and Environmental Engineering

Start Term
Fall **2020** ~~2019~~
Program Code
STRENG-CT
Department
Civil, Architectural, and Environmental Engineering
Title
Contemporary Struct Engr CT

Program Requirements and Description

In Workflow

1. **RCIVILEN Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. Kristy Giacomelli-Feys

Approval Path

1. 04/02/20 9:02 pm Joel Burken (burken): Approved for RCIVILEN Chair
2. 04/03/20 3:22 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:49 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Jun 13, 2019 by Brittany Parnell (ershenb)

Contemporary Structural Engineering Certificate

Choose one course from each of the following three groups (analysis, design, and structural system) and the fourth course from any of the three groups.

I. Structural Analysis Courses:

CIV ENG 5203/ARCH ENG 5203	Applied Mechanics In Structural Engineering
CIV ENG 5205/ARCH ENG 5205	Structural Analysis II
CIV ENG 5207/ARCH ENG 5207	Computer Methods of Structural Analysis
CIV ENG 5208/ARCH ENG 5208	Structural Dynamics

II. Structural Design Courses:

CIV ENG 5210/ARCH ENG 5210	Advanced Steel Structures Design
CIV ENG 5220/ARCH ENG 5220	Advanced Concrete Structures Design
CIV ENG 5222/ARCH ENG 5222	Prestressed Concrete Design
CIV ENG 5231/ARCH ENG 5231	Infrastructure Strengthening with Composites

III. Structural System Courses:

CIV ENG 5206/ARCH ENG 5206	Low-Rise Building Analysis and Design
CIV ENG 6213	Advanced Design in Steel and Lightweight Structures
AERO ENG 5234/MECH ENG 5234	Stability of Engineering Structures
ENG MGT 5314	Course ENG MGT 5314 Not Found

IV. Combined Structural Courses:

CIV ENG 5203/ARCH ENG 5203	Applied Mechanics In Structural Engineering
CIV ENG 5205/ARCH ENG 5205	Structural Analysis II
CIV ENG 5206/ARCH ENG 5206	Low-Rise Building Analysis and Design
CIV ENG 5207/ARCH ENG 5207	Computer Methods of Structural Analysis
CIV ENG 5208/ARCH ENG 5208	Structural Dynamics
CIV ENG 5210/ARCH ENG 5210	Advanced Steel Structures Design
CIV ENG 5220/ARCH ENG 5220	Advanced Concrete Structures Design
CIV ENG 5222/ARCH ENG 5222	Prestressed Concrete Design
CIV ENG 5231/ARCH ENG 5231	Infrastructure Strengthening with Composites
CIV ENG 6213	Advanced Design in Steel and Lightweight Structures
AERO ENG 5234/MECH ENG 5234	Stability of Engineering Structures
ENG MGT 5314	Course ENG MGT 5314 Not Found

Justification for request

Delete Eng Mgt 5314 from course lists. Course is no longer offered in EMSE

I cannot upload the document for some reason. Is this disabled?

Supporting Documents

Course Reviewer Comments

Key: 275

Program Change Request

Date Submitted: 04/03/20 11:28 am

Viewing: THEATRE-MI : Theatre Minor

File: 136.1

Last edit: 04/03/20 11:28 am

Changes proposed by: karmannc

Catalog Pages Using this Program
Theatre

Start Term
Spring 2021
Program Code
THEATRE-MI
Department
Arts, Languages, & Philosophy
Title
Theatre Minor

Program Requirements and Description

In Workflow

1. **RPHILOSO Chair**
2. **CCC Secretary**
3. **Arts & Humanities 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. Kristy Giacomelli-Feys

Approval Path

1. 04/14/20 10:41 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 04/24/20 9:18 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 10:15 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

Theatre Minor Curriculum

A minor in Theatre requires a minimum of **15** ~~16~~ hours comprised of the following courses:

Required Courses (6 credits):

Theatre 1150 – Theatre For Social Change (3 credits)

Theatre 2143-Stagecraft (3 credits)

~~THEATRE 1190~~	~~Theatre via Video~~	~~3~~
~~THEATRE 2141~~	~~Acting I~~	~~3~~
~~THEATRE 1142~~	~~Stage Productions, Performers~~	~~1~~
~~or THEATRE 3220~~	~~Theatre Ensemble~~	
~~THEATRE 1143~~	~~Stage Productions, Technicians~~	~~1~~
~~THEATRE 2143~~	~~Stagecraft~~	~~3~~

In addition to the courses listed above, students are ~~the student is~~ required to choose 3 ~~a concentration and complete enough hours from one~~ of the courses below (9 credits): ~~following concentration areas to meet the minimum 16 hours.~~

Theatre 2001 – Special Topics (3 credits)

Theatre 2141 - Acting I (3 credits)

Theatre 3001 – Special Topics (3 credits)

Theatre 3241 - Acting II (3 credits)

Theatre 3243 – Entertainment Design (3 credits)

Theatre 4001 – Special Topics (3 credits)

Theatre 4341 – Directing (3 credits)

~~Acting/Directing~~

~~THEATRE 3241~~	~~Acting II~~	~~3~~
~~THEATRE 4341~~	~~Directing~~	~~3~~
~~THEATRE 3242~~	~~Course THEATRE 3242 Not Found~~	~~3~~
~~or MUSIC 1111~~	~~Individual Music Instruction I~~	

~~Technical Theatre~~

~~THEATRE 3242~~	~~Course THEATRE 3242 Not Found~~	~~3~~
~~THEATRE 3241~~	~~Acting II~~	~~3~~
~~or THEATRE 4341~~	~~Directing~~	

Justification for request

The curriculum for the introductory theatre course needs serious updating, so we are getting rid of Theatre 1190: Theatre via Video and replacing it with Theatre 1150: Theatre for Social Change, which would be a required course for the Theatre Minor. This would put S&T in line with other universities around the country with theatre curriculum offered to non-majors.

The previous Theatre minor requirements were confusing to students. There were two separate concentration areas that overlapped too generally and offered no extreme differences. We want the

Theatre minor to be in line with other minors in the department in structure and aesthetic, so we are streamlining the requirements and making it clearer to the students. We believe this small structure change will have positive effects and will be clearer to students wanting to explore theatre during their time at Missouri S&T.

Supporting Documents

Course Reviewer Comments

Key: 136

Program Change Request

Date Submitted: 04/01/20 10:56 am

Viewing: WORKPSY-CT : Applied Workplace Psych CT

File: 304.10

Last approved: 10/25/19 9:31 am

Last edit: 04/03/20 3:23 pm

Changes proposed by: burnsde

Catalog Pages Using this Program
Psychology

Start Term
Fall ~~Spring~~ 2020
Program Code
WORKPSY-CT
Department
Psychological Science
Title
Applied Workplace Psych CT

Program Requirements and Description

In Workflow

1. **RPSYCHOL Chair**
2. **CCC Secretary**
3. **Pending CCC Agenda post**
4. CCC Meeting Agenda
5. Campus Curricula Committee Chair
6. FS Meeting Agenda
7. Faculty Senate Chair
8. Registrar
9. Kristy Giacomelli-Feys

Approval Path

1. 04/01/20 11:04 am Susan Murray (murray): Approved for RPSYCHOL Chair
2. 04/03/20 3:23 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary

History

1. Oct 25, 2019 by Brittany Parnell (ershenb)

Applied Workplace Psychology

The applied workplace psychology graduate certificate is designed to serve as a recruitment tool for the industrial-organizational psychology MS program. This program will offer students a set of foundational courses in industrial and organizational psychology. Students who pass all four courses with a grade of B or better in each course can gain entry to the I-O psychology MS program with the other application requirements being waived. The included courses cover an introductory seminar course, an advanced research methods course, a course on job analysis and performance appraisal and a small group dynamics course which will examine groups and teams in organizations.

All four courses included in the applied workplace psychology certificate curriculum will be offered once per year. All of these courses are available both on-campus as well as via distance.

Fall Courses:

PSYCH 5020	Introduction to Industrial-Organizational Psychology	3
PSYCH 5210	Advanced Research Methods	3

Spring Courses:

PSYCH 5601	Small Group Dynamics	3
PSYCH 5700	Job Analysis and Performance Management	3

Admissions requirements for the applied workplace psychology certificate are available at https://psych.mst.edu/graduate/gradpsych/admission/

~~The applied workplace psychology certificate program is open to all persons holding a B.S., M.S., orPh.D.degree in psychology, business, or a related field and who have a minimum of one year of professional employmentexperience.Once admitted to the program, the student must take the four designated courses (provided in the curriculumsection).In order to receive a graduate certificate, the student must have an average cumulative grade point of 3.0 or better in the certificatecourses.Once admitted to the program, a student will be given three years to complete theprogram.~~Students admitted to the applied workplace psychology certificate program will have non-degree graduate status, however, they will earn graduate credit for the course they complete. If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to the M.S. degree program in industrial organizational psychology. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degrees. Students who do not have all of the prerequisite courses necessary to begin the courses in the applied workplace psychology certificate program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

Justification for request

Changed admissions requirements, just inserted a link to the relevant webpage instead to keep it current

Supporting Documents

~~WORKPSY-CT_Applied Workplace Psych CT.pdf~~

~~Revised Graduate Certificate Proposal for Applied Workplace Psychology PROVOST approval.pdf~~

Course Reviewer Comments

kristyg (04/03/20 3:23 pm): Updated effective date term to Fall 2020

Key: 304

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/03/20 11:14 am

Viewing: **ARCH ENG 5001.002 : Renewable Systems in the Built Environment**

File: 4702

Last edit: 04/28/20 9:24 am

Changes proposed by: seelyj

Requested Effective Change Date	Summer 2020
Department	Civil, Architectural, and Environmental Engineering
Discipline	Architectural Engineering (ARCH ENG)
Course Number	5001
Topic ID	002
Experimental Title	Renewable Systems in the Built Environment
Experimental Abbreviated Course Title	Renew. Sys Blt. Env.
Instructors	S. Baur, H. Pickerill, T. Yarbrough

Experimental Catalog Description

This course will provide an understanding of the systems required for renewable power generation and integration of on-site storage and power utilization. Students develop an understanding of interconnected building systems through test facilities and industry design tools. Students will design and plan renewable power production and storage systems.

Prerequisites	Graduate or Senior Standing				
Field Trip Statement					
Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3

In Workflow

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

Approval Path

1. 04/10/20 6:14 am Joel Burken (burken): Approved for RCIVILEN Chair
2. 04/10/20 4:24 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:48 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

Justification for new course:	Increased demand from our rapidly-evolving society, along with our aging infrastructure has placed greater strains than ever on our electrical grid. Distributed Energy Resources (DER) consist of smaller-scale sources of power generation, storage, and management assets located closer to the end user. DER allows consumers and utilities to make power where it will be used, thus offering higher reliability, lower cost, greater efficiency, and increased resiliency.
Semester(s) previously taught	
Co-Listed Courses:	

Course Reviewer Comments

Key: 4702

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/06/20 3:35 pm

Viewing: **BIO SCI 2001.002 : Epidemics in a Changing World**

File: 4705

Last edit: 04/28/20 9:25 am

Changes proposed by: djwesten

Requested Effective Change Date	Summer 2020
Department	Biological Sciences
Discipline	Biological Sciences (BIO SCI)
Course Number	2001
Topic ID	002
Experimental Title	Epidemics in a Changing World
Experimental Abbreviated Course Title	Epidemics
Instructors	Dave Westenberg

Experimental Catalog Description

An introduction to the great epidemics of history. After taking this course students will be prepared to discuss how epidemics have shaped society today and how they inform our response to present and future epidemics.

Prerequisites

None

Field Trip Statement

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

Justification for new course:

In Workflow

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

Approval Path

1. 04/06/20 4:06 pm David Duvernell (duvernelld): Approved for RBIOLSCI Chair
2. 04/06/20 4:38 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/17/20 1:58 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 04/28/20 9:25 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

This course was developed in response to the desire to offer additional online courses for the Summer. This is a timely topic related to the ongoing COVID-19 pandemic and will provide an opportunity for students to learn about and engage in conversations related to current events.

Semester(s) previously taught	None
Co-Listed Courses:	

Course Reviewer Comments

Key: 4705

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/05/20 10:09 am

Viewing: **COMP SCI 5001.002 : Applied Social Network Analysis**

File: 4696

Last edit: 04/28/20 9:38 am

Changes proposed by: zhupe

Requested Effective Change Date	Summer 2020
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	5001
Topic ID	002
Experimental Title	Applied Social Network Analysis
Experimental Abbreviated Course Title	Applied SNA
Instructors	Jennifer Leopold

Experimental Catalog Description

Students will learn how to use networks to model and analyze relationships between people, artifacts, and ideas. Analyses will include identification of both communities and key individuals, and the modeling of diffusion processes such as in disease and influence. Students will practice methods in programming assignments using R or Python.

Prerequisites	A grade of "C" or better in Comp Sci 2500.
Field Trip Statement	

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

Justification for new course:	Social network analysis is a tool for analyzing the connections between people and organizations. It is important for decision making in domains such as business management, public health, and national security.

In Workflow

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

Approval Path

1. 04/07/20 9:29 am Bruce McMillin (ff): Approved for RCOMPSCI Chair
2. 04/09/20 9:39 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/22/20 8:48 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

Semester(s) previously taught	None
Co-Listed Courses:	

Course Reviewer Comments

Key: 4696

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/23/20 3:49 pm

Viewing: **COMP SCI 6001.005 : Internet of Things with Data Science**

File: 4693

Last edit: 04/28/20 9:41 am

Changes proposed by: zhupe

Requested Effective Change Date	Fall 2020
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	6001
Topic ID	005
Experimental Title	Internet of Things with Data Science
Experimental Abbreviated Course Title	IoT-DS
Instructors	Tie (Tony) Luo

Experimental Catalog Description

This course answers the following questions: What are the building blocks of Internet of Things? What are essential Data Science techniques? How to apply Data Science to IoT to solve real problems? On top of the fundamentals, this course also includes extensive, research-oriented discussions on advanced topics in IoT and DS (particularly machine learning).

Prerequisites	A grade of "C" or better in Comp Sci 2500, in one of Comp Sci 3610, Comp Sci 4601 or Comp Sci 5600, and in one of Stat 3113, Stat 3115, Stat 3117 or Stat 5643. Senior or Graduate standing.
Field Trip Statement	n/a
Credit Hours	LEC: 3 LAB: 0 IND: 0 RSD: 0 Total: 3

In Workflow

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

Approval Path

1. 04/23/20 3:52 pm Bruce McMillin (ff): Approved for RCOMPSCI Chair
2. 04/24/20 9:18 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 12:13 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

Justification for new course:	Internet of Things and Data Science are actively growing fields with high demand from both industry and academia, and closely interact with each other. In the meantime, many open problems have also emerged and are calling for solutions. This course is a timely response to this rising technological trend, where it not only equips students with fundamental understanding about the relevant technologies, but also exposes them to intensive research activities such as brainstorming, critiques, and scientific writing, as well as the training process of analytical and critical thinking. The course expects to mould students into forward-thinkers and practitioners who stand at the frontier.
Semester(s) previously taught	None
Co-Listed Courses:	

Course Reviewer Comments

Key: 4693

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/01/20 10:57 am

Viewing: **GEO ENG 5001.005 : Geomechanics for Geoprofessionals**

File: 4694

Last edit: 04/03/20 3:35 pm

Changes proposed by: gertschl

Requested Effective Change Date	Summer 2020
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Geological Engineering (GEO ENG)
Course Number	5001
Topic ID	005
Experimental Title	Geomechanics for Geoprofessionals
Experimental Abbreviated Course Title	Geomechanics
Instructors	Leslie Gertsch

Experimental Catalog Description

Fundamentals of rock mechanics for practicing professionals. Theory and behavior of intact rock and rock masses.

Prerequisites

Field Trip Statement

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

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. CAT entry
8. Registrar

Approval Path

1. 03/15/20 3:56 pm David Borrok (borrokd): Rollback to Initiator
2. 04/01/20 12:56 pm David Borrok (borrokd): Approved for RGEOSENG Chair
3. 04/03/20 3:35 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
4. 04/22/20 8:49 am Stephen Raper (sraper): Approved for Engineering DSCC Chair

Justification for new course:	Geological Engineering graduate students with no prior degree in engineering or exposure to the concepts of solid mechanics need a foundational course like this to succeed in the Geological Engineering graduate curriculum.
Semester(s) previously taught	None.
Co-Listed Courses:	
Course Reviewer Comments	**borrokd (03/15/20 3:56 pm):** Rollback: fix number

Key: 4694

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/04/20 1:06 pm

Viewing: **MATH 5001.004 : Mathematics of Machine Learning**

File: 4704

Last edit: 04/28/20 9:44 am

Changes proposed by: prunnion

Requested Effective Change Date	Fall 2020
Department	Mathematics & Statistics
Discipline	Mathematics (MATH)
Course Number	5001
Topic ID	004
Experimental Title	Mathematics of Machine Learning
Experimental Abbreviated Course Title	Math of Machine Learning
Instructors	Yanzhi Zhang

Experimental Catalog Description

Mathematics, programming, data analysis, and graphics associated with machine learning. Probability, Naïve Bayes classifier, stochastic gradient descent, self-organizing maps, decision trees and other tree-based methods, perception, reinforcement learning, keras, and neural networks. These topics will be treated from a mathematical viewpoint.

Prerequisites

Math 2222 with a grade of C or better; programming competency

Field Trip Statement

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

Justification for new course:	This course leverages the recent studies of one of our faculty members in a rapidly emerging field. This course should be attractive both to majors and non-majors.

In Workflow

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

Approval Path

1. 04/04/20 1:39 pm vsam: Approved for RMATHEMA Chair
2. 04/06/20 4:39 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/17/20 1:59 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair

Semester(s) previously taught

Co-Listed Courses:

Course Reviewer Comments

Key: 4704

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/04/20 12:37 pm

Viewing: **MATH 6001.007 : Introduction to Uncertainty Quantification**

File: 4703

Last edit: 04/28/20 9:45 am

Changes proposed by: prunnion

Requested Effective Change Date	Fall 2020
Department	Mathematics & Statistics
Discipline	Mathematics (MATH)
Course Number	6001
Topic ID	007
Experimental Title	Introduction to Uncertainty Quantification
Experimental Abbreviated Course Title	Intro to Uncertainty
Instructors	Nan Jiang

Experimental Catalog Description

Forward propagation of uncertainty through different types of PDEs with stochastic input parameters; basic concepts in probability and approximation theory; numerical techniques for uncertainty quantification problems including KL expansion, local selectivity analysis, sampling methods, reliability methods, and stochastic projection and collocation methods

Prerequisites	Math 5325
Field Trip Statement	

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

In Workflow

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

Approval Path

1. 04/04/20 1:39 pm vsam: Approved for RMATHEMA Chair
2. 04/06/20 4:39 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/17/20 2:00 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair

Justification for new course:	This course leverages the expertise of our new faculty to broaden our offerings at the graduate level.
Semester(s) previously taught	
Co-Listed Courses:	

Course Reviewer Comments

Key: 4703

Preview Bridge

Miscellaneous Change Request

New Miscellaneous Request

Date Submitted: 03/10/20 2:56 pm

Viewing: 2 : Applied and Environmental Biology to Biological Science

Last edit: 03/10/20 4:16 pm

Changes proposed by: verbler

Request Type Name Change

Title

Applied and Environmental Biology to Biological Science

Description

The Department of Biological Sciences requests a name change for its MS degree from the current: Applied and Environmental Biology to new: Biological Science. This aligns the degree name with the department name and more accurately reflects the diverse work that our graduate students are conducting (e.g., several students conduct basic scientific work, as opposed to applied or environmental work).

Supporting Documentation

MST PC July 2019.pdf

Course Reviewer Comments

In Workflow

1. Registrar
2. David Duvernell
3. RBIOLSCI Chair
4. Sciences DSCC Chair
5. CCC Secretary
6. Pending CCC Agenda post
7. CCC Meeting Agenda
8. Campus Curricula Committee Chair
9. FS Meeting Agenda
10. Faculty Senate Chair
11. Registrar
12. Registrar
13. Kristy Giacomelli-Feys

Approval Path

1. 03/10/20 3:17 pm Kristy Giacomelli-Feys (kristyg): Approved for Registrar
2. 03/10/20 3:44 pm Kristy Giacomelli-

Feys (kristyg): Approved for duvernelld

3. 03/10/20 4:16 pm
   Kristy Giacomelli-Feys (kristyg): Approved for RBIOLSCI Chair
4. 04/03/20 12:52 pm
   Katie Shannon (shannonk): Approved for Sciences DSCC Chair
5. 04/03/20 3:56 pm
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
6. 04/28/20 9:21 am
   Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Key: 2