Campus Curricula Committee Meeting Agenda
August 12, 2020
8:15am - 9:45am, Zoom
(For Faculty Senate Meeting of Sept 10, 2020)

Review of submitted Course Change forms:

File: 4720	BUS 1414 : The Inclusive Workplace
File: 4406.8	BUS 5230 : Financial Statement Analysis
File: 507.10	BUS 5360 : Business Operations
File: 2417.1	CER ENG 5230 : Glass Science And Engineering
File: 4279.22	CHEM ENG 3111 : Numerical Computing in Chemical and Biochemical Engineering
File: 4501.6	CHEM ENG 6180 : Advanced Applications of Computational Fluid Dynamics
File: 938.1	COMP SCI 4010 : Seminar
File: 4712	ENG MGT 4281 : Probabilistic Risk Analysis
File: 4713	ENG MGT 5281 : Probabilistic Risk Assessment I
File: 1668.1	ERP 4610 : Customer Relationship Management in ERP Environment
File: 2527.3	ERP 6610 : Advanced Customer Relationship Management in ERP Environment
File: 2566.8	FINANCE 5160 : Corporate Finance II
File: 2190.10	FINANCE 5260 : Investments I
File: 4499.6	FINANCE 5310 : Financial Technology and Analytics
File: 920.10	IS&T 4654 : Introduction to Web Design and Digital Media Studies
File: 2390.2	IS&T 4680 : Digital Media Development and Interactive Design
File: 445.4	IS&T 6654 : Advanced Web Design and Digital Media Studies
File: 1614.6	IS&T 6680 : Advanced Digital Web and New Media Development and Interactive Design
File: 4724	MECH ENG 5539 : Modeling Across Scales in Computational Mechanics
File: 2466.1	MUSIC 2111 : Individual Music Instruction III
File: 1983.1	PET ENG 4631 : Applied Reservoir Simulation
File: 79.3	PET ENG 6621 : Advanced Applied Reservoir Simulation
File: 4714	SYS ENG 5281 : Probabilistic Risk Analysis I

Review of submitted Degree Change forms:

File: 145.11	BIOINFO-MI : Bioinformatics Minor
File: 11.6	BUS&MS-MI : Business Minor
File: 28.65	CMP SC-BS : Computer Science BS
File: 40.6	E&S COM-MI : Elect & Social Commerce Minor
File: 155.55	EL ENG-BS : Electrical Engineering BS
File: 50.7	ENTPRNS-MI : Entrepreneurship Minor
File: 138.12	MGMT-MI : Management Minor
File: 190.1	MUSIC-MI : Music Minor
File: 359	PROPOSED : Aggregates Management CT
File: 335.6	SFTYENG-CT : Safety Engineering

Review of submitted Experimental Course forms:

File: 4722	CIV ENG 6001.007 : Characterization and Modeling of Cement-Based Materials
File: 4721	COMP ENG 6001.006 : Adaptive Resonance Theory and Applications
File: 4709	COMP SCI 5001.008 : Computer Science BootCamp Part 1
File: 4710	COMP SCI 5001.009 : Computer Science BootCamp Part 2
File: 4723	MECH ENG 5001.005 : Neuromechanics of Human Movement
File: 4734	MUSIC 2001.004 : The Heart of Rock n' Roll
File: 4715	STAT 5001.003 : Computational Bayesian Methods using Python
File: 4719	STAT 5001.004 : Design and Analysis of Clinical Trials
File: 4717	STAT 5001.005 : Foundations of Statistical Learning
File: 4718	STAT 5001.006 : Design and Analysis of Epidemiologic Studies
File: 4716	STAT 5001.007 : Statistical Shape Analysis
File: 4711	STAT 5001.008 : Topological Data Analysis

New Business:

Approval of 2020-2021 CCC Calendar

Course Change Request

New Course Proposal

Date Submitted: 06/08/20 5:48 pm

Viewing: **BUS 1414 : The Inclusive Workplace**

File: 4720

Last edit: 06/08/20 5:48 pm

Changes proposed by: cecq8z

Programs
referencing this
course

MOBLB&T-MI: Mobile Bus & Digital Transformation
MGMT-MI: Management Minor
E&S COM-MI: Elect & Social Commerce Minor
ENTPRNS-MI: Entrepreneurship Minor

Requested   Spring 2021
Effective Change
Date

Department
    Business and Information Technology

Discipline
    Business (BUS)

Course Number   1414

Title

for RBUSADMN Chair

3. 06/09/20 3:08 pm
   Kristy Giacomelli-Feys (kristyg):
   Approved for CCC Secretary

4. 06/17/20 12:29 pm
   Cecil Eng Huang Chua (cchua):
   Approved for Social Sciences DSCC Chair

5. 08/03/20 9:08 am
   Kristy Giacomelli-Feys (kristyg):
   Approved for Pending CCC Agenda post

The Inclusive Workplace

Abbreviated Course Title

The Inclusive Workplace

Catalog Description

This course will cover topics such as corporate social responsibility, ethics, diversity and inclusion (i.e. national culture, race, religion, age, gender, sexual orientation, and ability). Students will learn to recognize their own biases, understand the benefits of inclusion, and be exposed to a few strategies utilized to achieve an inclusive workplace.

Prerequisites

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

Justification for new course:

Required for new AACSB accreditation rules

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

siauk (06/08/20 4:19 pm): Rollback: Can we add this as an elective for Mobile Commerce & Digital Transformation minor also?

Key: 4720

Preview Bridge

Course Change Request

Date Submitted: 06/01/20 11:12 am

Viewing: **BUS 5230 : Financial Statement Analysis**

File: 4406.8

Last approved: 06/17/19 3:36 am

Last edit: 06/01/20 11:12 am

Changes proposed by: cecq8z

Programs
referencing this
course

BUS&MS-BS: Business and Mgmt Systems BS
FIN TCH-MI: Minor in Financial Technology, Analytics and
Transformation
FINANCE-CT: Finance CT
FIN TCH-CT: Financial Technology, Analytics and
Transformation CT
FINANCE-MI: Finance Minor

Requested
Effective Change
Date

Spring 2021 ~~Fall 2019~~

Department
Business and Information Technology

Discipline
Business (BUS)

Approval Path

1. 06/08/20 4:20 pm
siauk: Approved
for RBUSADMN
Chair
2. 06/09/20 3:09 pm
Kristy Giacomelli-
Feys (kristyg):

Course Number   5230

Title

History

Financial Statement Analysis

Abbreviated   Financial Stmt Analysis
Course Title

Catalog
Description
Analysis and interpretation of financial statements for profitability analysis, credit
analysis, and other business analyses that rely on financial data. Introduces emerging
roles of accounting analytics. Illustrates data analytics concepts and techniques to

detect earning management, predict fraud, and to provide insights into other business strategies.

Prerequisites

BUS 1210 or graduate standing and financial accounting knowledge. ~~Finance 2150 or equivalent basic corporate finance knowledge.~~

Field Trip
Statement

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

Required for Majors	No

Elective for Majors	Yes

Justification for change:

Experience of the instructor is that accounting knowledge is more critical than financial knowledge for the course.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

Course Change Request

Date Submitted: 06/01/20 11:12 am

Viewing: **BUS 5360 : Business Operations**

File: 507.10

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

Last edit: 06/01/20 11:12 am

Changes proposed by: cecq8z

Programs
referencing this
course

PRE MBA-MI: Pre MBA Minor

MGMT-MI: Management Minor

BUS&MS-BS: Business and Mgmt Systems BS

DSCMGMT-CT: Digital Supply Chain Mgmt CT

DSCMGMT-MI: Digital Supply Chain Mgt Minor

Requested
Effective Change
Date   **Spring 2021** ~~01/12/2016~~

Department
  Business and Information Technology

Discipline
  Business (BUS)

Course Number   5360

Title

          Business Operations

Approval Path

1. 06/08/20 4:20 pm siauk: Approved for RBUSADMN Chair
2. 06/09/20 3:09 pm Kristy Giacomelli-Feys (kristyg):

History

1. Jul 7, 2014 by
   barryf (507.1)
2. May 4, 2015 by
   barryf (507.4)

Business Operations
Abbreviated
Course Title

Catalog
Description
This course examines the concepts, processes, and institutions that are fundamental
to an understanding of business operations within organizations. Emphasis is on the
management and organization of manufacturing and service operations and the
application of quantitative methods to the solution of strategic, tactical and
operational problems.

Prerequisites

BUS 1210 or ENG MGT 2211; at least Junior standing; and one of the following: STAT 1111, STAT 1115, STAT ~~1116, STAT~~ 3111, STAT 3113, STAT 3115, or STAT 3117.

Field Trip Statement

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

Required for Majors	No
Elective for Majors	Yes

Justification for change:

STAT 1116 has been delisted.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Course Change Request

Date Submitted: 06/03/20 3:24 pm

Viewing: **CER ENG 5230 : Glass Science And Engineering**

File: 2417.1

Last edit: 07/21/20 9:50 am

Changes proposed by: smiller

Programs
referencing this
course
ADV MAT-CT: Advanced Engineering Materials Certificate

Requested Effective Change Date	**Spring 2021** ~~08/14/2018~~

Department
Materials Science & Engineering

Discipline
Ceramic Engineering (CER ENG)

Course Number   5230

Title

Abbreviated
Course Title   Glass Science And Engr

Approval Path

1. 06/03/20 3:38 pm
Greg Hilmas
(ghilmas):
Approved for
RMATSENG Chair
2. 06/09/20 3:09 pm
Kristy Giacomelli-
Feys (kristyg):

Glass Science And Engineering

Catalog Description

The development, manufacturing methods, applications, and properties of flat, fiber, container, chemical, and special purpose glasses. Composition/property relationships for glasses and nucleation-crystallization processes for glass-ceramics are also covered.

Prerequisites

Instructor Permission "C" or better grade in Cer Eng 2120.

Field Trip Statement

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

Required for Majors	No
	Yes No

Elective for
Majors

Justification for
change:
remove prerequisite to allow graduate students from other programs and external
customers seeking the Advanced Engineering Materials graduate certificate to enroll.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments
sraper (07/21/20 9:50 am): Added prereq state per Scott Miller and checked elective
for majors.

Course Change Request

Date Submitted: 05/27/20 11:05 am

Viewing: **CHEM ENG 3111 : Numerical Computing in Chemical and Biochemical Engineering**

File: 4279.22

Last approved: 11/04/19 6:00 am

Last edit: 06/09/20 3:10 pm

Changes proposed by: luksc

Programs
referencing this
course
  CH ENG-BS: Chemical Engineering BS

Other Courses
referencing this
course
 In The Prerequisites:
  CHEM ENG 3131 : Separations in Chemical and Biochemical Engineering
  CHEM ENG 3150 : Chemical Engineering Reactor Design

Requested
Effective Change
Date

Spring **2021** ~~2020~~

Department

Approval Path

1. 05/27/20 10:42 am
Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
2. 05/27/20 11:06 am

Chemical and Biochemical Engineering

Discipline
  Chemical Engineering (CHEM ENG)

Course Number   3111

Title

Christi Luks (luksc): Approved for RCHEMENG Chair
3. 06/09/20 3:10 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
4. 07/23/20 9:15 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
5. 08/03/20 9:08 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

History

1. Jan 24, 2017 by Daniel Forciniti (forcinit)
2. Mar 6, 2017 by kristyg (4279.14)
3. Feb 18, 2019 by jcwang (4279.17)
4. Nov 4, 2019 by jcwang (4279.21)

Numerical Computing in Chemical and Biochemical Engineering

Abbreviated   Numerical Computing
Course Title

Catalog
Description
 Students will add to their programming skills by exploring numerical computational
 techniques for solving and analyzing algebraic and calculus-based equations and
 systems of equations that describe chemical engineering processes.

Prerequisites
 Math 3304 and either ~~both~~ Comp Sci **1500,** ~~1570 and Comp Sci 1580,~~ or both Comp
 Sci **1570 and Comp Sci 1580,** ~~1971 and Comp Sci 1981,~~ or both Comp Sci **1971 and
 Comp Sci 1981,** ~~1972 and Comp Sci 1982; preceded~~ or **both Comp Sci 1972 and
 Comp Sci 1982; preceded or** accompanied by Chem Eng 2100.

Field Trip
Statement

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

Required for   Yes
Majors

Elective for   No
Majors

Justification for
change:
 New computer science prerequisites structure

Semesters
previously
offered as an

experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

kristyg (05/27/20 10:42 am): Rollback: Rolling back to re-submit with the addition of you as chair.

kristyg (06/09/20 3:10 pm): This was submitted too late for Fall 2020 deadline.

Course Change Request

Date Submitted: 06/09/20 9:35 am

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

File: 4501.6

Last approved: 02/05/18 3:29 am

Last edit: 06/09/20 3:11 pm

Changes proposed by: luksc

Requested Effective Change Date	**Spring 2021** ~~08/14/2018~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	6180
Title	
Abbreviated Course Title	Advanced CFD Application
Catalog Description Prerequisites	

Approval Path

1. 06/09/20 12:13 pm
   Christi Luks (luksc): Approved for RCHEMENG Chair
2. 06/09/20 3:11 pm
   Kristy Giacomelli-

Feys (kristyg): Approved for CCC Secretary
3. 07/23/20 9:15 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
4. 08/03/20 9:08 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

History

1. Feb 5, 2018 by Joseph Smith (smithjose)

Advanced Applications of Computational Fluid Dynamics

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

Chem Eng **5100** ~~4150~~ and **either** Chem Eng **3111 or Chem Eng 5150.** ~~5100.~~

Field Trip

Statement

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

Required for Majors	No
Elective for Majors	Yes

Justification for change:

Chem Eng 5150 has been co-listed with Chem Eng 4150, but in the future we will not be offering the 4xxx version. ChemEng 3111 has been added since this course was initially designed and has appropriate content to serve as a prerequisite for students who did their undergraduate work here.

Semesters previously offered as an experimental course

Enrollment: Spring 2015- 14, Spring 2016- 16, Spring 2017- 6

Co-Listed Courses:

Course Reviewer Comments

kristyg (06/09/20 3:11 pm): Submitted too late for Fall 2020 deadline.

Key: 4501

Preview Bridge

Course Change Request

Date Submitted: 05/01/20 10:57 pm

Viewing: **COMP SCI 4010 : Seminar**

File: 938.1

Last edit: 06/09/20 3:12 pm

Changes proposed by: zhupe

Programs
referencing this
course
CMP SC-BS: Computer Science BS

Requested   **Spring 2021** 08/14/2018
Effective Change
Date

Department
  Computer Science

Discipline
  Computer Science (COMP SCI)

Course Number   4010

Title

Abbreviated   Seminar
Course Title

Catalog
Description

Prerequisites

Approval Path

1. 05/04/20 8:03 am
   Bruce McMillin
   (ff): Approved for
   RCOMPSCI Chair
2. 06/09/20 3:12 pm
   Kristy Giacomelli-
   Feys (kristyg):

Seminar

Discussion of current topics.

Junior ~~Senior~~ standing.

Field Trip

Statement

Credit Hours	LEC: 0	LAB: 0	IND: 0	RSD: **1** ~~0~~
Total: **1** ~~0-6~~				

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

Justification for change:

Open it up to the undergraduates as a 1-credit elective course. This would allow more professionals for industry to come in and communicate with the students and, thus strengthen our industry ties.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (06/09/20 3:12 pm): This was submitted too late for Fall 2020 deadline.

Course Change Request

New Course Proposal

Date Submitted: 05/08/20 12:41 pm

Viewing: **ENG MGT 4281 : Probabilistic Risk Analysis**

File: 4712

Last edit: 06/09/20 3:15 pm

Changes proposed by: schlegelj

Requested Effective Change Date	Spring 2021
Department	Engineering Management and Systems Engineering
Discipline	Engineering Management (ENG MGT)
Course Number	4281
Title	
Abbreviated Course Title	PRA
Catalog Description	
Prerequisites	
Field Trip Statement	

Probabilistic Risk Analysis

A study of the techniques for qualitative and quantitative assessment of reliability, safety and risk associated with complex systems such as those encountered in the nuclear power industry. Emphasis is placed on fault tree analysis.

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

Justification for new course:

Cross-listing with existing course Nuc Eng 4281

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:
NUC ENG 4281 - Probabilistic Risk Assessment I

Key: 4712

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 05/08/20 12:42 pm

Viewing: **ENG MGT 5281 : Probabilistic Risk Assessment I**

File: 4713

Last edit: 06/09/20 3:15 pm

Changes proposed by: schlegelj

Requested Effective Change Date	Spring 2021
Department	Engineering Management and Systems Engineering
Discipline	Engineering Management (ENG MGT)
Course Number	5281
Title	
Abbreviated Course Title	PRA I

Catalog Description

Prerequisites

Field Trip Statement

2. 06/09/20 3:15 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 07/23/20 9:16 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
4. 08/03/20 9:28 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Probabilistic Risk Assessment I

A study of the techniques for qualitative and quantitative assessment of reliability, safety and risk associated with complex systems such as those encountered in the nuclear power industry. Emphasis is placed on fault tree analysis.

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

Justification for new course:

Cross-listing with existing course Nuc Eng 5281

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:
   NUC ENG 5281 - Probabilistic Risk Assessment I

Course Reviewer
Comments
   kristyg (06/09/20 3:15 pm): This was submitted too late for Fall 2020 deadline.

Preview Bridge

Course Change Request

Date Submitted: 06/01/20 11:12 am

Viewing: **ERP 4610 : Customer Relationship Management in ERP Environment**

File: 1668.1

Last edit: 06/01/20 11:12 am

Changes proposed by: cecq8z

Programs
referencing this
course

MOBLB&T-MI: Mobile Bus & Digital Transformation
BUS&MS-BS: Business and Mgmt Systems BS
DSCMGMT-MI: Digital Supply Chain Mgt Minor
MARKET-MI: Marketing Minor

Requested
Effective Change
Date

Spring 2021 ~~08/14/2018~~

Department
    Business and Information Technology

Discipline
    Enterprise Resource Planning (ERP)

Course Number   4610

Title

Approval Path

1. 06/08/20 4:22 pm siauk: Approved for RBUSADMN Chair
2. 06/09/20 3:16 pm Kristy Giacomelli-Feys (kristyg):

Customer Relationship Management in ERP Environment

Abbreviated Course Title	Customer Relationship Mgt ERP

Catalog Description

The course emphasizes identification (targeting), acquisition, retention, and development (expansion) of (profitable) customers, as well as effective and efficient management of customers, using information technology. SAP CRM, SAS BI tools, and ~~Sybase~~ mobile application development are **used to illustrate concepts in the class.** ~~used.~~

Prerequisites

ERP 2110 or preceded or accompanied by ERP 5110.

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:

Description made consistent with ERP 6610

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Course Change Request

Date Submitted: 06/01/20 11:13 am

Viewing: **ERP 6610 : Advanced Customer Relationship Management in ERP Environment**

File: 2527.3

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

Last edit: 06/01/20 11:13 am

Changes proposed by: cecq8z

Programs referencing this course

ANA&DTA-CT: Bus Analytics & Data Sci CT

DATA WR-CT: Business Intelligence CT

DSCMGMT-CT: Digital Supply Chain Mgmt CT

ERP-CT: Enterprise Resource Plan CT

MOBLB&T-CT: Mobile Business and Digital Transformation CT

Requested Effective Change Date	**Spring 2021** ~~08/01/2014~~
Department	Business and Information Technology
Discipline	Enterprise Resource Planning (ERP)

Approval Path

1. 06/08/20 4:23 pm siauk: Approved for RBUSADMN Chair
2. 06/09/20 3:16 pm Kristy Giacomelli-Feys (kristyg):

Course Number   6610

Title

History

1. Sep 24, 2014 by
lahne (2527.1)

Advanced Customer Relationship Management in ERP Environment

Abbreviated   Adv CRM
Course Title

Catalog
Description

The course emphasizes identification ~~Identification~~ (targeting), acquisition, retention, and development (expansion) of (profitable) **customers, as well as effective and efficient management of customers, using IT.** ~~customers. Effective and efficient mgmt of customers, usingIT.~~SAP CRM, SAS BI tools, and ~~Sybase~~ mobile application development are **used to illustrate concepts in the class.** ~~used.~~ Research paper and presentation required.

Prerequisites

ERP 2110 or preceded or accompanied by ERP 5110.

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:

Description to be made consistent with ERP 4610. Short forms of words removed.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

Preview Bridge

Course Change Request

Date Submitted: 06/01/20 11:13 am

Viewing: **FINANCE 5160 : Corporate Finance II**

File: 2566.8

Last approved: 06/17/19 3:36 am

Last edit: 06/01/20 11:13 am

Changes proposed by: cecq8z

Programs
referencing this
course
BUS&MS-BS: Business and Mgmt Systems BS
FIN TCH-MI: Minor in Financial Technology, Analytics and
Transformation
FINANCE-CT: Finance CT
FIN TCH-CT: Financial Technology, Analytics and
Transformation CT
FINANCE-MI: Finance Minor

Requested
Effective Change
Date

Spring 2021 ~~Fall 2019~~

Department
Business and Information Technology

Discipline
Finance (FINANCE)

Approval Path

1. 06/08/20 4:23 pm
   siauk: Approved
   for RBUSADMN
   Chair
2. 06/09/20 3:16 pm
   Kristy Giacomelli-
   Feys (kristyg):

Course Number   5160

Title

History

Corporate Finance II

Abbreviated   Corporate Finance II
Course Title

Catalog
Description
  This course provides a rigorous and consistent presentation of the theory of financial
  decisions. Capital markets are analyzed under assumptions of risk aversion and

uncertainty. Models of modern portfolio theory are discussed including the CAPM and the Modigliani-Miller analysis.

Prerequisites
  Finance 2150 or **graduate standing and** ~~equivalent~~ basic corporate finance knowledge.

Field Trip
Statement

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

Required for Majors	No

Elective for Majors	Yes

Justification for change:
  Clarify wording on prerequisites

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Course Change Request

Date Submitted: 06/01/20 11:13 am

Viewing: **FINANCE 5260 : Investments I**

File: 2190.10

Last approved: 06/17/19 3:36 am

Last edit: 06/01/20 11:13 am

Changes proposed by: cecq8z

Programs
referencing this
course

BUS&MS-BS: Business and Mgmt Systems BS

FIN TCH-MI: Minor in Financial Technology, Analytics and
Transformation

FINANCE-CT: Finance CT

FIN TCH-CT: Financial Technology, Analytics and
Transformation CT

FINANCE-MI: Finance Minor

Requested
Effective Change
Date

Spring 2021 ~~Fall 2019~~

Department
　Business and Information Technology

Discipline
　Finance (FINANCE)

Course Number　　5260

Approval Path

1. 06/08/20 4:24 pm
   siauk: Approved
   for RBUSADMN
   Chair
2. 06/09/20 3:16 pm
   Kristy Giacomelli-
   Feys (kristyg):

Title

History

1. May 1, 2014 by
barryf (2190.1)
2. Jun 29, 2015 by
barryf (2190.5)
3. Jun 17, 2019 by
barryf (2190.8)

Investments I

Abbreviated Course Title	Investments I

Catalog
Description
Introduction to fundamental elements of investment analysis. Students learn
financial tools and gain necessary knowledge to select among alternative financial

assets. Real world experience includes stock analysis, portfolio simulations and interactions with professionals in the securities industry.

Prerequisites
 Finance 2150 or **graduate standing and** ~~equivalent~~ basic corporate finance knowledge.

Field Trip
Statement

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

Required for Majors	No

Elective for Majors	Yes

Justification for change:
 Clarify wording on prerequisites.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Course Change Request

Date Submitted: 06/01/20 11:14 am

Viewing: **FINANCE 5310 : Financial Technology and Analytics**

File: 4499.6

Last approved: 12/03/18 5:58 am

Last edit: 06/01/20 11:14 am

Changes proposed by: cecq8z

Programs
referencing this
course

BUS&MS-BS: Business and Mgmt Systems BS
FIN TCH-MI: Minor in Financial Technology, Analytics and
Transformation
FINANCE-CT: Finance CT
FIN TCH-CT: Financial Technology, Analytics and
Transformation CT
FINANCE-MI: Finance Minor

Requested
Effective Change
Date

Spring **2021** 2019

Department
Business and Information Technology

Discipline
Finance (FINANCE)

Approval Path

1. 06/08/20 4:24 pm
   siauk: Approved
   for RBUSADMN
   Chair
2. 06/09/20 3:16 pm
   Kristy Giacomelli-
   Feys (kristyg):

Course Number   5310

Title

3. 06/17/20 12:29 pm
   Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair

4. 08/03/20 9:28 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

History

1. Feb 5, 2018 by Barry Flachsbart (barryf)

2. Dec 3, 2018 by ershenb (4499.4)

Financial Technology and Analytics

Abbreviated   Tech and Analytics
Course Title

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

Prerequisites

Finance 2150 or Graduate **Standing and basic corporate finance knowledge.** ~~Standing.~~

Field Trip
Statement

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

Required for Majors	No

Elective for Majors	Yes

Justification for change:

Clarify wording on prerequisites.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Course Change Request

Date Submitted: 05/17/20 5:02 pm

Viewing: **IS&T 4654 : Introduction to Web Design and Digital Media Studies** ~~Development~~

File: 920.10
Last approved: 05/04/15 3:20 am
Last edit: 05/17/20 5:02 pm
Changes proposed by: cecq8z

Programs
referencing this
course

MOBLB&T-MI: Mobile Bus & Digital Transformation
BUS&MS-BS: Business and Mgmt Systems BS
HCI-MI: Human-Computer Interaction and User Experience Minor
ENTPRNS-MI: Entrepreneurship Minor

Other Courses
referencing this
course
In The Prerequisites:
IS&T 5652 : Advanced Web Development

Spring 2021 ~~08/17/2015~~

Approval Path

1. 04/24/20 10:46 am
   siauk: Rollback to Initiator
2. 05/17/20 4:57 pm
   siauk: Rollback to Initiator

Requested
Effective Change
Date

Department
    Business and Information Technology

Discipline
    Info Science & Technology (IS&T)

Course Number   4654

Title

History

Introduction to Web **Design** and Digital Media **Studies** ~~Development~~

Web and Digital Media Dev

Abbreviated
Course Title

Catalog
Description

The ~~This~~ course covers **web** ~~techniques and tools for~~ design and **digital** ~~development of web-based~~ media, including **topics such as social media, cyberculture, service design thinking, citizen journalism, crowd intelligence, brain-computer interfaces, privacy, and copyright.** ~~text, graphics, animation, audio, and video.~~

Prerequisites

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:

  More in line with the idea of this as a communications course.

Semesters previously offered as an experimental course

Co-Listed
Courses:

Course Reviewer
Comments
siauk (04/24/20 10:46 am): Rollback: As discussed.

siauk (05/17/20 4:57 pm): Rollback: Please see if the new title is approprite. Thanks.

Course Change Request

Date Submitted: 05/17/20 7:09 pm

Viewing: **IS&T 4680 : Digital** ~~Introduction to Web and New~~ **Media Development and Interactive Design** ~~Studies~~

File: 2390.2

Last approved: 10/19/15 3:33 am

Last edit: 05/17/20 7:09 pm

Changes proposed by: cecq8z

Programs
referencing this
course
   MOBLB&T-MI: Mobile Bus & Digital Transformation
   HCI-MI: Human-Computer Interaction and User Experience
   Minor
   BUSAPPS-MI: Business Applications and Software
   Development Minor

Requested   **Spring 2021** ~~01/12/2016~~
Effective Change
Date

Department
   Business and Information Technology

Discipline
   Info Science & Technology (IS&T)

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. 05/17/20 4:57 pm siauk: Rollback to Initiator
2. 05/17/20 5:24 pm siauk: Rollback to Initiator

Course Number   4680

Title

History

Digital ~~Introduction to Web and New~~ Media **Development and Interactive Design** ~~Studies~~

Intro to Web Studies

Abbreviated
Course Title

Catalog
Description

This ~~The~~ course covers **techniques** ~~web culture, including topics such as social media, citizen journalism, crowd intelligence, privacy,~~ and **tools for design and development of digital and interactive media, including text, graphics, animation, audio, and video.** ~~copyright.~~

Prerequisites

A grade of "C" or better in IS&T 1551, IS&T 1561 or Comp Sci 1570 ~~Junior or Senior 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:
  Switching material for 4654 and 4680

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

siauk (05/17/20 4:57 pm): Rollback: Please see if the new title is approprite. Thanks.

siauk (05/17/20 5:24 pm): Rollback: Change "A grade of "C" or better in IS&T 1551, IS&T 1561 1552 or Comp Sci 1570" to "A grade of "C" or better in either IS&T 1551, IS&T 1561 or Comp Sci 1570" I think you forgot to remove 1552.

siauk (05/17/20 7:06 pm): Rollback: Still the same. Probably need to remove 1552.

Key: 2390

Course Change Request

Date Submitted: 05/17/20 7:10 pm

Viewing: **IS&T 6654 : Advanced Web Design and Digital Media Studies** ~~Development~~

File: 445.4

Last approved: 07/07/14 3:48 am

Last edit: 05/17/20 7:10 pm

Changes proposed by: cecq8z

> Programs
> referencing this
> course
>
> ENT&TEC-CT: Entrepreneur & Tech Innovat CT
> DIGITMD-CT: Digital Media & Web Design CT
> MOBLB&T-CT: Mobile Business and Digital Transformation CT

Requested Effective Change Date

Spring 2021 ~~08/01/2014~~

Department
Business and Information Technology

Discipline
Info Science & Technology (IS&T)

Course Number   6654

Title

Advanced Digital Media

Approval Path

1. 04/24/20 10:58 am
   siauk: Rollback to Initiator
2. 05/17/20 4:57 pm
   siauk: Rollback to Initiator

3. 05/17/20 5:30 pm
siauk: Rollback to
Initiator
4. 05/17/20 7:06 pm
siauk: Rollback to
Initiator
5. 05/17/20 7:20 pm
siauk: Approved
for RINFSCTE
Chair
6. 06/09/20 3:17 pm
Kristy Giacomelli-
Feys (kristyg):
Approved for CCC
Secretary
7. 06/17/20 12:29
pm
Cecil Eng Huang
Chua (cchua):
Approved for
Social Sciences
DSCC Chair
8. 08/03/20 9:28 am
Kristy Giacomelli-
Feys (kristyg):
Approved for
Pending CCC
Agenda post

History

1. Jul 7, 2014 by
lahne (445.1)

Advanced Web **Design** and Digital Media **Studies** ~~Development~~

Abbreviated
Course Title

Catalog
Description

The ~~This~~ course covers **web** ~~advanced techniques and tools for the~~ design and **digital** ~~development of web-based~~ media, including **topics such as social media, cyberculture, service design thinking, citizen journalism, crowd intelligence, brain-computer interfaces, privacy, and copyright.** ~~text, graphics, animation, audio, and video.~~ This course is an advanced version of Web **Design** and Digital Media **Studies.** ~~Development, with additional assignments.~~

Prerequisites

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:
Switching 6654 and 6680. More in line with the idea of this as a communications course.

Semesters
previously
offered as an

experimental

course

Co-Listed

Courses:

siauk (04/24/20 10:58 am): Rollback: As discussed.

siauk (05/17/20 4:57 pm): Rollback: Please see if the new title is approprite. Thanks.

siauk (05/17/20 5:30 pm): Rollback: Catalog Description: change "This course is an advanced version of Intro to Cyberculture Web and Digital Design" to "This course is an advanced version of Web Design and Digital Media Studies"

siauk (05/17/20 7:06 pm): Rollback: Latest one not changed.

Key: 445

Preview Bridge

Course Change Request

Date Submitted: 05/17/20 5:04 pm

Viewing: **IS&T 6680 : Advanced Digital ~~Web and New~~ Media Development and Interactive Design ~~Studies~~**

File: 1614.6

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

Last edit: 05/17/20 5:04 pm

Changes proposed by: cecq8z

Programs
referencing this
course

DIGITMD-CT: Digital Media & Web Design CT

E&S COM-CT: Elec & Social Commerce CT

HCI-CT: Human Computer Interaction CT

MOBLB&T-CT: Mobile Business and Digital Transformation CT

Requested Effective Change Date
Spring 2021 ~~08/01/2014~~

Department
Business and Information Technology

Discipline
Info Science & Technology (IS&T)

Course Number   6680

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. 05/17/20 4:56 pm siauk: Rollback to Initiator
2. 05/17/20 5:25 pm siauk: Approved for RINFSCTE Chair

Title

History

Advanced **Digital** ~~Web and New~~ Media **Development and Interactive Design** ~~Studies~~

Abbreviated Course Title   Advanced Web Studies

Catalog
Description

This ~~The~~ course covers **advanced techniques** ~~web culture, including topics such as social media; citizen journalism, crowd intelligence, privacy,~~ and **tools for the design and development of digital and interactive media, including text, graphics, animation, audio, and video.** ~~copyright.~~ This course is an advanced version of **IST 4680,** ~~Intro to Web Studies,~~ with additional assignments.

Prerequisites

Some knowledge of programming

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:
  Same as 4680

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

siauk (05/17/20 4:56 pm): Rollback: Please see if the new title is approprite. Thanks.

Key: 1614

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 06/11/20 6:21 pm

Viewing: **MECH ENG 5539 : Modeling Across Scales in Computational Mechanics**

File: 4724

Last edit: 06/11/20 6:21 pm

Changes proposed by: nisbett

Requested Effective Change Date	Spring 2021
Department	Mechanical & Aerospace Engineering
Discipline	Mechanical Engineering (MECH ENG)
Course Number	5539
Title	
Abbreviated Course Title	Model Computational Mech
Catalog Description	
Prerequisites	

Approval Path

1. 06/11/20 6:22 pm J. Keith Nisbett (nisbett): Approved for RMECHENG Chair
2. 07/21/20 9:00 am Kristy Giacomelli-Feys (kristyg):

Modeling Across Scales in Computational Mechanics

Basic principles of computational mechanics, focusing on modeling and simulation on various length scales. The goal is to mathematically represent mechanical and material behavior, and to effectively solve those equations. Fundamental principles of continuum and sub-continuum (atomic) models will be learned through lectures and hands-on Matlab coding.

Civ Eng 2210, Mech Eng 2519, or consent of instructor for majors that do not require either of these courses; or graduate standing.

Field Trip
Statement

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

Justification for
new course:

This course serves a useful function in an important research area. It has been offered 3 times experimentally under the title Modeling of Energy Materials. The title and course description have been adjusted to focus more on the modeling techniques and less on the specifics of the energy materials. This allows a broader applicability to a range of other mechanics areas. The prerequisites are accordingly loosened a little to allow a broader range of majors.

Semesters
previously
offered as an
experimental
course

Sp2017 - 10

Sp2018 - 6

Sp2019 - 16

Co-Listed
Courses:

aero eng 5539 - Course Not Found

Course Reviewer
Comments

Key: 4724

Preview Bridge

Course Change Request

Date Submitted: 07/30/20 2:41 pm

Viewing: **MUSIC 2111 : Individual Music Instruction III**

File: 2466.1

Last edit: 07/30/20 2:41 pm

Changes proposed by: gamezp

Requested Effective Change Date	08/01/2014
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	2111
Title	
Abbreviated Course Title	Individual Mus Instr III

Catalog Description			
Prerequisites			
Field Trip Statement			
Credit Hours	LEC: 0	LAB: 0	IND: 0
RSD: 0	Total: 1-2		

Approval Path

1. 07/30/20 5:57 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair

2. 08/03/20 9:07 am
   Kristy Giacomelli-
   Feys (kristyg):
   Approved for CCC
   Secretary
3. 08/03/20 9:11 am
   Petra Dewitt
   (dewittp):
   Approved for Arts
   & Humanities
   DSCC Chair
4. 08/03/20 9:35 am
   Kristy Giacomelli-
   Feys (kristyg):
   Approved for
   Pending CCC
   Agenda post

Individual Music Instruction III

Individual music instruction in student's concentration area. **Can be repeated for credit.**

None Consent of instructor.

Required for Majors	No
Elective for Majors	No

Justification for change:

Allowing this course to be repeated for credit simplifies the process of continuing an individual's training in their concentration area. The prerequisites have been removed as this should be something individuals can sign up for immediately. Both

of these changes will remove needless impediments to enrolment that prevent this and similar sections from making, and will prove valuable for students.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Preview Bridge

Course Change Request

Date Submitted: 06/30/20 2:48 pm

Viewing: **PET ENG 4631 : Applied Reservoir Simulation**

File: 1983.1

Last edit: 07/29/20 9:11 am

Changes proposed by: weim

Requested Effective Change Date	**Spring 2021** ~~08/14/2018~~
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Petroleum Engineering (PET ENG)
Course Number	4631
Title	
Abbreviated Course Title	Applied Reservoir Simul

Catalog Description

Prerequisites

Field Trip Statement

Credit Hours   LEC: **2** ~~3~~   LAB: **1** ~~0~~   IND: 0

Approval Path

1. 06/30/20 2:53 pm David Borrok (borrokd): Approved for RGEOSENG Chair
2. 07/21/20 9:00 am Kristy Giacomelli-Feys (kristyg):

Approved for CCC Secretary

3. 07/21/20 12:16 pm
Stephen Raper (sraper): Rollback to RGEOSENG Chair for Engineering DSCC Chair

4. 07/29/20 9:12 am
David Borrok (borrokd): Approved for RGEOSENG Chair

5. 07/30/20 1:53 pm
Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary

6. 07/30/20 1:58 pm
Stephen Raper (sraper): Approved for Engineering DSCC Chair

7. 08/03/20 9:29 am
Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Applied Reservoir Simulation

Simulation of ~~actual~~ reservoir problems using ~~both~~ field and individual well models to determine well spacing, production effects of secondary and enhanced recovery processes, future rate predictions and recovery, coning effects, ~~relative permeability adjustments~~ and **more.** ~~other history matching techniques.~~ **The lab focuses on learning computer simulation models, including practice using the software and data analyses techniques.**

Pet Eng 3520.

RSD: 0   Total: 3

Required for   No
Majors

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

Justification for
change:

This is Reservoir Simulation class, and students need to interact with reservoir simulation software: a very complicated process, and hands-on and very easy to make mistakes. Lab activities involving the modeling software were a focus in the original course format, but were not characterized properly in the distribution of credit hours. This change more accurately reflects what is going on within this course.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer

Comments

sraper (07/21/20 10:12 am): Changed effective date to Spring 2021.

sraper (07/21/20 12:16 pm): Rollback: modify course description.

Key: 1983

Preview Bridge

Course Change Request

Date Submitted: 06/30/20 2:49 pm

Viewing: **PET ENG 6621 : Advanced Applied Reservoir Simulation**

File: 79.3

Last approved: 06/20/19 3:39 am

Last edit: 07/29/20 9:16 am

Changes proposed by: weim

Requested Effective Change Date	**Spring 2021** ~~Fall 2019~~
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Petroleum Engineering (PET ENG)
Course Number	6621
Title	
Abbreviated Course Title	Adv Appld Reservoir Simulation

Catalog Description

Prerequisites

Field Trip Statement

Approval Path

1. 06/30/20 2:53 pm David Borrok (borrokd): Approved for RGEOSENG Chair
2. 07/21/20 9:00 am Kristy Giacomelli-Feys (kristyg):

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

Justification for change:

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 79

Approved for CCC Secretary

3. 07/21/20 12:16 pm Stephen Raper (sraper): Rollback to RGEOSENG Chair for Engineering DSCC Chair

4. 07/29/20 9:17 am David Borrok (borrokd): Approved for RGEOSENG Chair

5. 07/30/20 1:53 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary

6. 07/30/20 1:58 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

7. 08/03/20 9:29 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Advanced Applied Reservoir Simulation

Advanced simulation of ~~actual~~ reservoir problems using ~~both~~ field and individual well models to determine well spacing, production effects of secondary and enhanced recovery processes, future rate predictions and recovery, coning effects, ~~relative permeability adjustments~~ and **more.** ~~other history matching techniques.~~ **The lab focuses on learning advanced computer simulations and pre- and post-processing techniques for big datasets.**

Pet Eng 4621 or equivalent.

This is Advanced Reservoir Simulation class, and students need to interact with reservoir simulation software: a very complicated process, and hands-on and very easy to make mistakes. Lab activities have been a consistent part of the course, but the distribution of credit hours did not accurately reflect this. This change will more accurately reflect how the course is run.

sraper (07/21/20 10:11 am): Changed effective date to Spr 2021.
sraper (07/21/20 12:16 pm): Rollback: Modify course description.

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 05/08/20 12:44 pm

Viewing: **SYS ENG 5281 : Probabilistic Risk Analysis I**

File: 4714

Last edit: 05/08/20 12:44 pm

Changes proposed by: schlegelj

Requested Effective Change Date	Fall 2020
Department	Engineering Management and Systems Engineering
Discipline	Systems Engineering (SYS ENG)
Course Number	5281
Title	
Abbreviated Course Title	PRA I

Catalog Description

Prerequisites

Field Trip Statement

Approval Path

1. 05/08/20 12:45 pm
Suzanna Long (longsuz): Approved for RENGMNGT Chair

2. 06/09/20 3:18 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 07/23/20 9:16 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
4. 08/03/20 9:34 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Probabilistic Risk Analysis I

A study of the techniques for qualitative and quantitative assessment of reliability, safety and risk associated with complex systems such as those encountered in the nuclear power industry. Emphasis is placed on fault tree analysis.

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

Justification for new course:

Cross-listing with existing course Nuc Eng 5281

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

NUC ENG 5281 - Probabilistic Risk Assessment I

Course Reviewer
Comments

Preview Bridge

Program Change Request

Date Submitted: 04/30/20 4:21 pm

Viewing: BIOINFO-MI : Bioinformatics Minor

File: 145.11

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

Last edit: 06/09/20 3:08 pm

Changes proposed by: zhupe

Catalog Pages Using this Program
[Bioinformatics Minor Curriculum](Bioinformatics%20Minor%20Curriculum)

Start Term
Spring 2021 ~~Fall 2018~~
Program Code
BIOINFO-MI
Department
Computer Science
Title
Bioinformatics Minor

Approval Path

1. 04/30/20 4:24 pm Bruce McMillin (ff): Approved for RCOMPSCI Chair
2. 06/09/20 3:08 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 07/23/20 9:15 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
4. 08/03/20 9:08 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Program Requirements and Description

Bioinformatics is the rapidly-developing field that applies computational methods to address biological questions, and includes new advances in computer science, mathematics, and biology. Students entering the field of bioinformatics should have some training in each of these fields.

The minor is designed for students pursuing a B.S. who would have the necessary prerequisites for the required courses. Students pursuing a B.A. may participate if the prerequisites for the required courses are fulfilled. Each department (biological sciences, computer science, mathematics) will designate a minor advisor. The student's minor advisor will be chosen from outside of their major area of study.

Required courses (in approximate recommended order):

BIO SCI 1113	General Biology	3
COMP SCI 1570 & COMP SCI 1580	Introduction To C++ Programming and Introduction To Programming Laboratory	4
COMP SCI 1575 & COMP SCI 1585	Data Structures and Data Structures Laboratory	4
BIO SCI 2213	Cell Biology	3
or BIO SCI 2223	General Genetics	
COMP SCI 2300	File Structures and Introduction to Database Systems	3
BIO SCI 4323	Molecular Genetics	3
~~STAT 5425~~	~~Course STAT 5425 Not Found~~	~~3+~~
~~or STAT 5346~~	~~Regression Analysis~~	
~~or STAT 5353~~	~~Statistical Data Analysis~~	
STAT 3425	**Introduction to Biostatistics**	**3+**
or STAT 5346	**Regression Analysis**	
or STAT 5353	**Statistical Data Analysis**	
One additional course, either at the 2000-level or above in MATH or COMP SCI, or at the 3000-level or above in BIO SCI, outside of the major area of study, and as agreed upon by the minor advisor.		3+

BIO SCI 5323/ COMP SCI 5700	Bioinformatics (It is strongly recommended that this course be taken after the other BIO SCI and COMP SCI requirements.)	3

Justification for request

Course number updates for Stat 5425

Supporting Documents

Course Reviewer Comments

kristyg (06/09/20 3:08 pm): This was submitted to late to make the Fall 2020 publication

Program Change Request

Date Submitted: 06/01/20 4:29 pm

Viewing: BUS&MS-MI : Business Minor

File: 11.6

Last approved: 07/14/15 3:35 pm

Last edit: 06/09/20 3:09 pm

Changes proposed by: cecq8z

Catalog Pages Using this Program
[Business and Management Systems](#)
[Information Science and Technology](#)

Start Term
Spring 2021 ~~08/17/2015~~
Program Code
BUS&MS-MI
Department
Business and Information Technology
Title
Business Minor

Approval Path

1. 06/08/20 4:20 pm siauk: Approved for RBUSADMN Chair
2. 06/09/20 3:09 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 06/17/20 12:29 pm Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
4. 08/03/20 9:08 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Program Requirements and Description

Minor in Business

The minor in business and management systems requires the following 15 hours of coursework:

FINANCE 2150	Corporate Finance I	3
ECON 1100	Principles Of Microeconomics	3
or ECON 1200 or BUS 1414	Course ECON 1200 or BUS 1414 Not Found	
BUS 1110	Introduction to Management and Entrepreneurship	3
BUS 1210	Financial Accounting	3
MKT 3110	Marketing	3

Justification for request

Ethics/diversity required for new AACSB accreditation

Supporting Documents

Course Reviewer Comments

kristyg (06/09/20 3:09 pm): This was submitted too late for Fall 2020 submission.

Key: 11

Program Change Request

Date Submitted: 05/02/20 12:15 am

Viewing: CMP SC-BS : Computer Science BS

File: 28.65

Last approved: 03/03/20 11:52 am

Last edit: 06/09/20 3:11 pm

Changes proposed by: zhupe

Catalog Pages Using this Program
[Computer Science](#)

Start Term
Spring 2021 ~~Fall 2020~~
Program Code
CMP SC-BS
Department
Computer Science
Title
Computer Science BS

Approval Path

1. 05/01/20 10:35 am Bruce McMillin (ff): Rollback to Initiator
2. 05/04/20 8:07 am Bruce McMillin (ff): Approved for RCOMPSCI Chair
3. 06/09/20 3:11 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
4. 07/23/20 9:15 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
5. 08/03/20 9:09 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Program Requirements and Description

Bachelor of Science
Computer Science

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

For the Bachelor of Science degree in Computer Science, a minimum of 128 credit hours is required. This requirement is in addition to credit received for algebra, trigonometry, and basic ROTC courses. An average of at least two grade points per credit hour must be attained. A "C" or better grade must be earned in each computer science course used to fulfill B.S. in computer science degree requirements as well as in COMP ENG 2210, COMP ENG 3150, and the required ethics elective.

The computer science curriculum requires twelve semester hours in humanities, exclusive of foreign language, and must include ENGLISH 1160 or ENGLISH 3560. A minimum of nine semester hours is required in social sciences, including either HISTORY 1300, HISTORY 1310, HISTORY 1200, or POL SCI 1200. Specific requirements for the bachelor degree are outlined in the sample program listed below.

Sample Course of Study

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**

First Semester	Credits	Second Semester	Credits
FR ENG 1100	1	COMP SCI 1200	3
COMP SCI 1500[1]	3	COMP SCI 1570	3
Laboratory Science Elective[2]	5	COMP SCI 1580	1
MATH 1214[3]	4	MATH 1215[4]	4
ENGLISH 1120	3	ENGLISH 1160 or 3560	3
		Humanities / Social Science Elective[5]	3
	16		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
COMP SCI 1575	3	COMP SCI 2200	3
COMP SCI 1585	1	COMP SCI 2500	3
COMP ENG 2210[6]	3	PHYSICS 2135[9]	4
PHYSICS 1135[7]	4	COMP ENG 3150[6]	3
Statistics Elective[8]	3	Literature Elective[10]	3
Humanities / Social Science Elective[5]	3		
	17		16

Junior Year

First Semester	Credits	Second Semester	Credits
COMP SCI 2300	3	COMP SCI 3500	3
COMP SCI 3800	3	COMP SCI 3610	3
MATH 3108	3	Cmp Sc Elective[12,16]	3
Humanities / Social Science Elective[5]	3	Sci/Eng Elective[13]	3
Ethics Elective[11]	3	SP&M S 1185[14]	3
	15		15

Senior Year

First Semester	Credits	Second Semester	Credits
COMP SCI 4090	3	COMP SCI 4091	3
COMP SCI 4610	3	Cmp Sc Electives[12,16]	3
Cmp Sc Electives[12,16]	6	Humanities / Social Science Elective[5]	3
Sci/Eng Elective[13]	3	Free Elective[15,16]	8
	15		17

Total Credits: 128

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[1] Or COMP SCI 1971 and COMP SCI 1981. May be waived in lieu of a score of 4 or 5 on the AP Computer Science A exam.

[2]

	An approved science lecture-laboratory course pair totaling at least four credit hours. The laboratory is mandatory in all cases. The approved course pairs are: CHEM 1310 and CHEM 1319;PHYSICS 1505 and PHYSICS 1509; PHYSICS 1605 and PHYSICS 1609; GEOLOGY 1120 and GEOLOGY 1129; BIO SCI 1113 and BIO SCI 1219; BIO SCI 1223 and BIO SCI 1229; BIO SCI 2213 and BIO SCI 2219; BIO SCI 2353 and BIO SCI 2359; BIO SCI 2383 and BIO SCI 2389.
3	Or MATH 1208.
4	Or MATH 1221.
5	Any nine credit hours of social science courses and three credit hours of humanities courses on the approved lists maintained on the computer science website. One course must satisfy the Missouri and U.S. Constitution requirement. COMP SCI 4700 may be counted as a Social Science elective.
6	Laboratory not required.
7	Or both PHYSICS 1111 and PHYSICS 1119.
8	One of STAT 3113, STAT 3115, STAT 3117, or STAT 5643.
9	Or both PHYSICS 2111 and PHYSICS 2119.
10	One literature course on the approved list maintained on the computer science website.
11	One of PHILOS 3225, PHILOS 3235, PHILOS 4340, or PHILOS 4368.
12	Twelve hours of elective COMP SCI courses excluding COMP SCI 2002, COMP SCI 4700, COMP SCI 2001 - Domain Exploration and Innovation Methods, COMP SCI 3001 - Skill Development for Entrepreneurs and Innovators, COMP SCI 4001 - Advanced Domain Exploration and Innovation Methods, COMP SCI 4001 - Interpersonal Dynamics for Entrepreneurs and Innovators, and all COMP SCI x9xx courses. At least nine hours must be 5000-level or higher. At least nine hours must be lecture courses.
13	Any six hours chosen from departments that offer a degree associated with either the Discipline Specific Curricula Committee for Sciences or the Discipline Specific Curricula Committee for Engineering, excluding Computer Science. The following courses are also excluded: all 1000-level MATH courses, all STAT courses below 4000-level, all 1000-level Physics courses, PHYSICS 2111, PHYSICS 2119, PHYSICS 2135, and PHYSICS 2145.
14	SP&M S 1185 or SP&M S 3245 or THEATRE 3245 or one of the two complete four-course sequences in Advanced ROTC (MIL ARMY 3250, MIL ARMY 3500, MIL ARMY 4250, and MIL ARMY 4500; or MIL AIR 3110, MIL AIR 3120, MIL AIR 4110 and MIL AIR 4120).
15	Courses chosen from any discipline so that 128 hours are completed. These and only these courses may be taken pass/fail and only one course may be taken pass/fail each semester. The following courses are excluded: all 1000-level MATH courses, all STAT courses below 4000-level, all 1000-level Physics courses, PHYSICS 2111, PHYSICS 2119, PHYSICS 2135, PHYSICS 2145, any COMP SCI x9xx courses, and the first two years of ROTC.
16	**COMP SCI 4010 can be counted as Computer Science Elective or Free Elective, limited to three times.**

Justification for request

There are three changes as follows:

1.Remove Geo 1110/1119, since Geo 1119 no longer exists.

2.To be consistent with CC form of Comp Sci 1570, we update the BS to make either Comp Sci 1500 or Comp Sci 1971 and Comp Sci 1981 to fulfill the first course requirement for the CS degree.

3.To be consistent with CC form of Comp Sci 4010, open Comp Sci 4010 up to the undergraduates as a 1-credit elective course. This would allow more professionals for industry to come in and communicate with the students and, thus strengthen our industry ties.

The changes were approved by the faculty of the CS department at their faculty meeting on April 30th, 2020.

Supporting Documents

Course Reviewer Comments

ff (05/01/20 10:35 am): Rollback: We're not doing the accelerated program as originally envisioned.

kristyg (06/09/20 3:11 pm): This was submitted too late for Fall 2020 deadline.

Program Change Request

Date Submitted: 06/01/20 4:29 pm

Viewing: E&S COM-MI : Elect & Social Commerce Minor

File: 40.6

Last approved: 07/14/15 3:37 pm

Last edit: 06/09/20 3:14 pm

Changes proposed by: cecq8z

Catalog Pages Using this Program
[Business and Management Systems](#)
[Information Science and Technology](#)

Start Term
Spring 2021 ~~08/17/2015~~
Program Code
E&S COM-MI
Department
Business and Information Technology
Title
Elect & Social Commerce Minor

Approval Path

1. 06/08/20 4:21 pm siauk: Approved for RBUSADMN Chair
2. 06/09/20 3:14 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 06/17/20 12:29 pm Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
4. 08/03/20 9:28 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Program Requirements and Description

Minor in Electronic and Social Commerce

The minor in electronic and social commerce requires the following 15 hours of coursework:

IS&T 4641	Course IST 4641 Not Found	3
BUS 1414	**The Inclusive Workplace**	
Three courses from the following list:		12
IS&T 4335	Course IST 4335 Not Found	
IS&T 5251	Course IST 5251 Not Found	
IS&T 5652	Advanced Web Development	
IS&T 5168	Law and Ethics in E-Commerce	
IS&T 5885	Human-Computer Interaction	
IS&T 5886	Prototyping Human-Computer Interactions	
MKT 5310	Digital Marketing and Promotions	
MKT 4580	Marketing Strategy	

Justification for request

Ethics/diversity important for understanding business

Supporting Documents

Course Reviewer Comments

kristyg (06/09/20 3:14 pm): This was submitted too late for Fall 2020 deadline.

Key: 40

Program Change Request

Date Submitted: 04/30/20 6:14 pm

Viewing: EL ENG-BS : Electrical Engineering BS

File: 155.55

Last approved: 03/03/20 1:41 pm

Last edit: 06/09/20 3:14 pm

Changes proposed by: ferdowsi

Catalog Pages Using this Program
Electrical Engineering

Start Term
Spring 2021 ~~Fall 2020~~
Program Code
EL ENG-BS
Department
Electrical and Computer Engineering
Title
Electrical Engineering BS

Program Requirements and Description

note

Bachelor of Science
Electrical Engineering[1]

Entering freshmen desiring to study Electrical Engineering will be admitted to the Foundational Engineering and Computing Program. They will be permitted to state a Electrical Engineering preference, which will be used as a consideration for 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 the student the information necessary to make an informed decision regarding the choice of a major.

For the Bachelor of Science degree in Electrical Engineering a minimum of 128 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. An average of at least two grade points per credit hour must be attained. At least two grade points per credit hour must also be attained in all courses taken in Electrical Engineering.

Electrical and Computer Engineering degree programs will require a minimum of 21 credit hours of humanities/social-sciences as specified below:

- ENGLISH 1120
- HISTORY 1200 **or** HISTORY 1300 **or** HISTORY 1310 **or** POL SCI 1200
- ECON 1100 **or** ECON 1200
- Technical Communication Elective: ENGLISH 1160 **or** ENGLISH 3560
- SP&M S 1185
- The remaining minimum of 6 additional credit hours must be three-credit hour lecture courses offered in disciplines in the humanities and social sciences. Humanities courses are defined as those in: Art, English and Technical Communication, Etymology, Foreign Languages, Music, Philosophy, Speech and Media Studies, and Theatre. Social Sciences courses are defined as those in: Economics, History, Political Science, and Psychology. Study abroad courses may count as H/SS courses. H/SS courses numbered 2001, 3001, and 4001 (experimental courses) may also be used to complete these elective requirements.

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

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

Free Electives Footnote:

Students are required to take five hours of free electives in consultation with their academic advisor. Credits which do not count towards this requirement are deficiency courses (such as algebra and trigonometry), and extra credits in required courses. Any courses outside of engineering and science must be at least three credit hours.

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
FR ENG 1100[2]	1	MECH ENG 1720	3
CHEM 1310	4	MATH 1215[3]	4
CHEM 1319	1	PHYSICS 1135[3,4]	4
MATH 1214[3]	4	ECON 1100 or 1200	3
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3	Elective-Hum or Soc Sci (any level)[5]	3
ENGLISH 1120	3		
	16		17
Sophomore Year			
First Semester	**Credits**	**Second Semester**	**Credits**
ELEC ENG 2100[3,6,7]	3	ELEC ENG 2200[3,6,7,10]	3
ELEC ENG 2101[3,6]	1	ELEC ENG 2201[3,6,7]	1
MATH 2222[3]	4	ELEC ENG 2120[3,7,9]	3
COMP ENG 2210[3,6,8]	3	MATH 3304[3]	3
COMP ENG 2211[3,6]	1	Engineering Science Elective[11]	3
PHYSICS 2135[3,4]	4	~~COMP SCI 1570~~	~~3~~
		~~COMP SCI 1580[12]~~	~~1~~
		COMP SCI 1500	**3**
	16		16
Junior Year			

First Semester	Credits	Second Semester	Credits
ELEC ENG 3100[3,6,9,10]	3	ELEC ENG 3600[3,9]	4
ELEC ENG 3101[3,6,9,10]	1	El Eng Elective A[10,14,19]	3
ELEC ENG 3320	3	ELEC ENG 3430	3
ELEC ENG 3321	1	ELEC ENG 3431	1
SP&M S 1185[13]	3	STAT 3117[12]	3
MATH 3108	3	Communication Elective [13]	3
	14		17

Senior Year

First Semester	Credits	Second Semester	Credits
El Eng Power Elective[3,6,9,15]	3	El Eng Elective C[10,14]	3
El Eng Power Elective Lab[3,6,9,15]	1	El Eng Elective E[17,19]	3
El Eng Elective B[10,14]	3	ELEC ENG 4097	3
El Eng Elective D[10,16,19]	3	Professional Development Elective[20]	3
ELEC ENG 4096[3]	1	Free Elective[18]	3
Free Elective[18]	3		
Elective-Hum or Soc Sci (any level)[5]	3		
	17		15

Total Credits: 128

Note: Student must satisfy the common freshman year academic requirements and be admitted into the department. See Foundational Engineering and Computing Program.

[1]	The minimum number of hours required for a degree in Electrical Engineering is 128.
[2]	Students that transfer after their freshman year are not required to enroll in FR ENG 1100.
[3]	A minimum grade of "C" must be attained in MATH 1214, MATH 1215, MATH 2222, and MATH 3304, PHYSICS 1135 and PHYSICS 2135 (or their equivalents), ELEC ENG 2100, ELEC ENG 2101, ELEC ENG 2120, ELEC ENG 2200, ELEC ENG 2201, ELEC ENG 3320, ELEC ENG 3321, ELEC ENG 3430, ELEC ENG 3431, ELEC ENG 3100, ELEC ENG 3101, and ELEC ENG 3600, the ELEC ENG power elective (ELEC ENG 3500 and ELEC ENG 3501 or ELEC ENG 3540 and ELEC ENG 3541), ELEC ENG 4096 and COMP ENG 2210 and COMP ENG 2211. Also, students may not enroll in other courses that use these courses as prerequisites until the minimum grade of "C" is attained.
[4]	Students may take PHYSICS 1111 and PHYSICS 1119 in place of PHYSICS 1135. Students may take PHYSICS 2111 and PHYSICS 2119 in place of PHYSICS 2135.
[5]	All electives must be approved by the student's advisor. Students must comply with the general education requirements with respect to selection and depth of study. These requirements are specified in the current catalog.
[6]	Students who drop a lecture course prior to the last week to drop a class must also drop the corequisite lab.
[7]	

	Students must earn a passing grade on the ELEC ENG Advancement Exam I (associated with ELEC ENG 2100) before they enroll in ELEC ENG 2120 or ELEC ENG 2200 and ELEC ENG 2201.
8	Students must earn a passing grade on the COMP ENG Advancement Exam (associated with COMP ENG 2210) before they enroll in any course with COMP ENG 2210 and/or COMP ENG 2211 as prerequisites.
9	Students must earn a passing grade on the ELEC ENG Advancement Exam II (associated with ELEC ENG 2120) before they enroll in ELEC ENG 3500, ELEC ENG 3540, ELEC ENG 3501, ELEC ENG 3541, ELEC ENG 3320,ELEC ENG 3321, ELEC ENG 3430,ELEC ENG 3431, ELEC ENG 3100, ELEC ENG 3101, or ELEC ENG 3600, or other courses with ELEC ENG 2120 as a prerequisite.
10	Students must earn a passing grade on the ELEC ENG Advancement Exam III (associated with ELEC ENG 2200) before they enroll in ELEC ENG 3100 and ELEC ENG 3101 or other courses with ELEC ENG 2200 as a prerequisite.
11	Students must take MECH ENG 2340, MECH ENG 2519, MECH ENG 2527, PHYSICS 2305, PHYSICS 2311, PHYSICS 2401, NUC ENG 3103, CHEM 2210, BIO SCI 2213, or BIO SCI 2223. The following pairs of course are substitutions: CIV ENG 2200 and MECH ENG 2350 or ENG MGT 2110 and ENG MGT 3310.
12	Students may replace STAT 3117 with STAT 3115 or STAT 5643.
13	Students must take ENGLISH 3560 or ENGLISH 1160. Students may replace SP&M S 1185 with the ROTC sequence of MIL ARMY 4250 and MIL ARMY 4500 or MIL AIR 4110 and MIL AIR 4120.
14	ELEC ENG Electives A, B, and C must be chosen from ELEC ENG 56XX, ELEC ENG 3500, ELEC ENG 3540, ELEC ENG 3410, ELEC ENG 3250, ELEC ENG 3340, ELEC ENG 3440, ELEC ENG 3120, and COMP ENG 3150. Only one ELEC ENG 56XX course may be used.
15	The ELEC ENG Power Elective may be satisfied with ELEC ENG 3500 and ELEC ENG 3501 or ELEC ENG 3540 and ELEC ENG 3541.
16	ELEC ENG Elective D must be a 4XXX-level or above ELEC ENG or COMP ENG course with at least a 3-hour lecture component. ELEC ENG 4000 , ELEC ENG 5000, COMP ENG 4000, COMP ENG 5000, ELEC ENG 4099, COMP ENG 4099, ELEC ENG 4096, COMP ENG 4096, ELEC ENG 4097, COMP ENG 4097, ELEC ENG 5070, COMP ENG 5070, ELEC ENG 58XX, and COMP ENG 58XX may not be used for Elective D.
17	ELEC ENG Elective E may be any 3XXX-level or above ELEC ENG or COMP ENG course except ELEC ENG 3002, ELEC ENG 38XX, ELEC ENG 4096, ELEC ENG 4097, and ELEC ENG 5070 and COMP ENG 3002, COMP ENG 38XX, COMP ENG 4000, COMP ENG 4096, COMP ENG 4097, and COMP ENG 5070.
18	Students are required to take six hours of free elective in consultation with their academic advisors. Credits that do not count toward this requirement are deficiency courses (such as algebra and trigonometry) and extra credits from courses meeting other requirements. Any courses outside of engineering and science must be at least three credit hours. ELEC ENG 28XX, ELEC ENG 38XX, ELEC ENG 4096, ELEC ENG 4097, COMP ENG 28XX, COMP ENG 38XX, COMP ENG 4096 and COMP ENG 4097 may not be used for free electives. No more than one credit hour of ELEC ENG 3002 or COMP ENG 3002 may be applied to the BS degree for free electives.
19	Students that pursue an optional degree emphasis area have restricted options for El Eng Electives A, D, and E. Students admitted to the accelerated BS/MS program must satisfy El Eng Electives D and E with 5xxx or 6xxx-level courses and a minimum grade of B.
20	Students must take one of the following courses: BUS 5980, ECON 4430, ECON 5337, ENG MGT 2310, ENG MGT 3320, ENG MGT 4110, ENG MGT 5514, or PHILOS 3225.

All Electrical Engineering students are encouraged to take the fundamentals of Engineering Examination prior to graduation. It is the first step toward becoming a registered professional engineer.

An accelerated BS/MS program and a formal emphasis in circuits and electronics, optics and devices, controls and systems, communications and signal processing, power and energy, electromagnetics, or computer engineering are optional.

Emphasis Areas for Electrical Engineering

Circuits and Electronics, Communications and Signal Processing, Computer Engineering, Controls and Systems, Electromagnetics, Optics and Devices, Power and Energy

A declared emphasis area is not required. A student may choose to obtain an Electrical Engineering degree without a formal emphasis or may choose to obtain an Electrical Engineering degree with a declared emphasis in one or more of the emphasis areas of electrical engineering. A major change request is required to add the emphasis area option to the degree program.

For students who seek an Electrical Engineering degree without a formal emphasis, these emphasis areas may guide the choice of their ELEC ENG Electives A, B, C, D, and E as well as their free electives. Students should consult with their advisors on such course selections.

For students who seek an Electrical Engineering degree with a declared emphasis, courses in the declared emphasis area will be applied to ELEC ENG Electives A, D, and E in the degree requirements. For students who choose to have multiple emphasis areas, the additional courses will apply to ELEC ENG Elective B or C and free elective requirements. Students should seek guidance from their advisors on emphasis areas and on courses that are relevant to more than one emphasis area. Students may have an emphasis area or emphasis areas listed on their transcript by completing three three-credit-hour courses in electrical and computer engineering from the designated lists with at least one of the courses being at the 4XXX-level or above. This requirement will be satisfied by completing the relevant ABC Elective course, a 4XXX-level or above course for Elective D, and another 3XXX-level or above course for Elective E from the designated listing. The required ELEC ENG courses ELEC ENG 3320, ELEC ENG 3430, ELEC ENG 3100, and ELEC ENG 3600 and the course used to satisfy the power requirement (ELEC ENG 3500 or ELEC ENG 3540) may not be used to meet the three course requirement. Transfer courses do not apply to emphasis areas. A co-listed course may count toward both areas. Experimental courses ELEC ENG 3001, ELEC ENG 4001, ELEC ENG 5001, COMP ENG 3001, COMP ENG 4001, or COMP ENG 5001 require departmental approval to apply toward an emphasis area.

Circuits and Electronics		
ELEC ENG 3120	Electronics II	3
ELEC ENG 41XX and ELEC ENG 51XX Courses		
Communications and Signal Processing		
ELEC ENG 3410	Digital Signal Processing	3
ELEC ENG 3440	Digital Communications II	3
ELEC ENG 44XX and ELEC ENG 54XX Courses		
Computer Engineering		
ELEC ENG 3410, COMP ENG 3XXX-level or above Courses (Excluding COMP ENG 3000, COMP ENG 4000, COMP ENG 5000, COMP ENG 3002, COMP ENG 4096, COMP ENG 4097, and COMP ENG 5070) See the COMP ENG degree program for details on COMP ENG areas.		

Controls and Systems		
ELEC ENG 3340	Basic Programmable Logic Controllers	3
ELEC ENG 43XX and ELEC ENG 53XX Courses		
Electromagnetics		
ELEC ENG 46XX and ELEC ENG 56XX Courses		
Optics and Devices		
ELEC ENG 3250	Electronic And Photonic Devices	3
ELEC ENG 42XX and ELEC ENG 52XX Courses		
Power and Energy		
ELEC ENG 3500	Electromechanics	3
ELEC ENG 3540	Power System Design And Analysis	3
ELEC ENG 5150	Photovoltaic Systems Engineering	3
ELEC ENG 5520	Power Electronics	3
ELEC ENG 5521	Power Electronics Laboratory	2
ELEC ENG 45XX and ELEC ENG 55XX Courses		

Accelerated BS/MS Program Option for EE and CpE Majors

Electrical engineering or computer engineering undergraduates in ECE at Missouri S&T may opt to apply for an accelerated BS/MS ECE program where a student can achieve both degrees faster than if pursuing the degrees separately. The degrees may be BS EE and MS EE, BS CpE and MS CpE, BS EE and MS CpE, or BS CpE and MS EE. The benefits of the program for admitted students are:

- Undergraduate and graduate courses may be chosen with greater flexibility,
- Up to six hours of 5000-level or above ECE 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 credit courses may be taken anytime after entering the program, and
- Work on a thesis project may begin before the BS requirements are completed.

The BS-degree requirements are modified for admitted students such that EE Electives D and E or CpE Electives B and C will be satisfied by six-credit-hours of 5000-level or above ECE coursework. To be eligible for the accelerated BS/MS ECE program, an EE or CpE undergraduate must be at or beyond the junior level with a minimum of 60 credit hours and must have completed 18 credit hours of EE and/or CpE courses at Missouri S&T with at least a 3.50 GPA in the ECE courses. To be admitted, the student must complete the program application and must have the recommendation of an ECE faculty member who agrees to serve as the graduate thesis advisor. No other MS degree requirements are changed. The MS degree must be for the thesis option. The program may be combined with existing honors research and emphasis area 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 the shared-credit courses are completed. Courses taken for shared credit will be identified on the application form and on Graduate Form 1, which is submitted after the student enters the graduate program. The six hours of shared-credit coursework will be taken as undergraduate credit, must be approved by the academic advisor, and may not be undergraduate research, special problems, or transfer courses (a co-listed

course can only apply for these undergraduate requirements if it is under an EE or CpE registration. Note that the choice of EE or CpE registration may affect how a course can apply within an MS program.) 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 will require formal application to the graduate program. Acceptance to the MS degree program from the Accelerated program is automatic so long as the student meets ECE graduate student academic performance requirements. To remain in the Accelerated program, the student must maintain good standing within the undergraduate EE or CpE 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.

The student is responsible for checking on how dual-enrollment status and graduate coursework will affect scholarships and other financial aid. Once you become a graduate student, you **are not** eligible for Federal Pell Grants, though are still eligible for Federal Financial Aid and will be eligible for fellowships and teaching/research assistantships. International students should check with international affairs during completion of an accelerated BS/MS to ensure immigration status will be maintained throughout the program.

Justification for request
The ECE faculty voted to replace CpSc 1570/1580 with CpSc 1500. CpSc 1500 is a new class which will be the pre-requisite for the upgraded CpSC 1570/1580.
Supporting Documents
Course Reviewer Comments
kristyg (06/09/20 3:14 pm): This was submitted too late for Fall 2020 deadline.

Key: 155

Program Change Request

Date Submitted: 06/01/20 4:30 pm

Viewing: ENTPRNS-MI : Entrepreneurship Minor

File: 50.7

Last approved: 07/14/15 3:37 pm

Last edit: 06/09/20 3:16 pm

Changes proposed by: cecq8z

Catalog Pages Using this Program
[Business and Management Systems](#)
[Information Science and Technology](#)

Start Term
Spring 2021 ~~08/17/2015~~
Program Code
ENTPRNS-MI
Department
Business and Information Technology
Title
Entrepreneurship Minor

In Workflow

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

Approval Path

1. 06/08/20 4:22 pm siauk: Approved for RBUSADMN Chair
2. 06/09/20 3:16 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 06/17/20 12:29 pm Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
4. 08/03/20 9:28 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Program Requirements and Description

Minor in Entrepreneurship

The minor in entrepreneurship requires the following 15 hours of coursework:

BUS 1110	Introduction to Management and Entrepreneurship	3
BUS 5980	Business Models for Entrepreneurship and Innovation	3
MKT 5310	Digital Marketing and Promotions	3
Two courses from the following list:		6
BUS 1414	**The Inclusive Workplace**	
BUS 4150	Course BUS 4150 Not Found	
BUS 5580	Strategic Management	
IS&T 4641	Course IST 4641 Not Found	
IS&T 4654	Web and Digital Media Development	
IS&T 4335	Course IST 4335 Not Found	
IS&T 5251	Course IST 5251 Not Found	
~~IS&T 6654~~	~~Advanced Web and Digital Media Development~~	
IS&T 5886	Prototyping Human-Computer Interactions	
ENG MGT 5511	Technical Entrepreneurship	
ENG MGT 5411	Engineering Design Optimization	

Justification for request

In line with new AACSB requirements

Supporting Documents

Course Reviewer Comments

kristyg (06/09/20 3:16 pm): This was submitted too late for Fall 2020 deadline.

Key: 50

Program Change Request

Date Submitted: 06/01/20 4:30 pm

Viewing: MGMT-MI : Management Minor

File: 138.12

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

Last edit: 06/09/20 3:17 pm

Changes proposed by: cecq8z

Catalog Pages Using this Program
[Business and Management Systems](#)
[Information Science and Technology](#)

Start Term
Spring 2021 ~~08/15/2016~~
Program Code
MGMT-MI
Department
Business and Information Technology
Title
Management Minor

In Workflow

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

Approval Path

1. 06/08/20 4:24 pm siauk: Approved for RBUSADMN Chair
2. 06/09/20 3:17 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 06/17/20 12:29 pm Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
4. 08/03/20 9:29 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

Program Requirements and Description

Minor in Management

The minor in management requires the following 15 hours of coursework:

BUS 1110	Introduction to Management and Entrepreneurship	3
BUS 1414	**The Inclusive Workplace**	
Three courses from the following list:		12
BUS 2910	Business Law	
BUS 3115	Introduction to Teambuilding and Leadership	
BUS 4111	Course BUS 4111 Not Found	
BUS 4150	Course BUS 4150 Not Found	
BUS 5360	Business Operations	
BUS 5470	Human Resource Management	
BUS 5580	Strategic Management	
BUS 5910	**Privacy and Information Security Law**	
IS&T 4261	Information Systems Project Management	
ENG MGT 3320	Introduction to Project Management	

Justification for request

In line with new AACSB requirements

Supporting Documents

Course Reviewer Comments

kristyg (06/09/20 3:17 pm): This was submitted too late for Fall 2020 deadline.

Key: 138

Program Change Request

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

Viewing: **MUSIC-MI : Music Minor**

File: 190.1

Last edit: 05/06/20 1:29 pm

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

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
4. 04/28/20 9:05 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 05/06/20 10:14 am Kristy Giacomelli-

Program Requirements and Description

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 1151

- Music 3253

- Music 2163

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 oftheory.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.

kristyg (05/06/20 10:14 am): Rollback: Correct course information

dewittp (05/06/20 1:29 pm): Updated course numbers as approved by CCC 5/6/20

Program Change Request

Date Submitted: 07/21/20 1:28 pm

Viewing: PROPOSED : Aggregates Management CT

File: 359

Last edit: 07/21/20 1:28 pm

Changes proposed by: kabp3

Start Term
Fall 2020
Program Code
PROPOSED
Department
Mining & Nuclear Engineering
Title
Aggregates Management CT

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. 07/08/20 2:22 pm Kwame Awuah-Offei (kwamea): Approved for MINEXP ENG Chair
2. 07/21/20 9:01 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 07/21/20 12:11 pm Stephen Raper (sraper): Rollback to MINEXP ENG Chair for Engineering DSCC Chair
4. 07/21/20 1:24 pm Kwame Awuah-Offei (kwamea): Rollback to Initiator
5. 07/21/20 1:28 pm Kwame Awuah-

Program Requirements and Description

PROGRAM DESCRIPTION

The Aggregates Management Certificate Program is designed to provide formalized education in management for the aggregates and industrial minerals mining sector. This certificate program aims to equip students with skills that allow them to be effective plant/mine managers for this sector. Students admitted to this certificate program must take the four required courses provided in the curriculum section, and obtain a cumulative GPA of 3.0 or better to earn the certificate. Students are admitted in non-matriculated status; however, if they complete the graduate certificate with a grade of "B" or better in each of the courses taken, they may be admitted to the Master of Science degree program in mining engineering, if they choose to. The certificate credits taken by students admitted to this program will count toward their master's degree.

ADMISSION:

The Aggregates Management Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in Engineering, Science, and/or Mathematics 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 Aggregates Management 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 mining engineering. 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 Aggregates Management Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

CONTRIBUTING FACULTY:

Mining Engineering; Explosives Engineering

CURRICULUM:

The graduate certificate in aggregates management requires the following courses:

1. MIN ENG 5212 Aggregates and Quarrying

Advanced coverage of topics on the stone and aggregate industry, including surface and underground operations, plant equipment, economics, marketing, transportation, and environmental topics. The course will include at least one field trip and a design project.

Delivery: Main Campus & Online/Spring Semester

2. MIN ENG 5412 Aggregates Materials Sizing and Characterization

Geological formation of aggregates; aggregate properties and their measurements; aggregates for specific end-user applications; specifications and standards; processing (crushing, screening, classification, and washing); plant design and flow sheet analysis; quality control and assurance. Field trip to a nearby quarry required.

Delivery: Main Campus & Online/Spring Semester

3. MIN ENG 5612 Principles of Explosives Engineering

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

Delivery: Main Campus & Online/Fall Semester

4. MIN ENG 6532 Mine Management II

The course covers advanced concepts in managing mine operations. Topics to be covered include TQM, statistical process control, benchmarking, KPI, standards and standardization, ISO 9000: Quality Control, ISO 14000: Environmental systems, OHSAS 18000. Management systems, SA8000, Social Accountability and others.

Delivery: Main Campus & Online

Justification for request

This course will allow professionals or recent graduates who are looking for a graduate certificate in the specific area of aggregates and construction materials mining to get specialized training beyond their BS degrees.

Supporting Documents

Signed -Aggregates Management-cover letter.pdf

Aggregates Management - Graduate Certificate.pdf

MS&T PC June 2020 REVISED.pdf

Course Reviewer Comments

sraper (07/21/20 12:11 pm): Rollback: DSCC - Eng desires clean-up of form: "At what point should the CT proposal in aggregates be cleaned up? It currently has in the Admissions section

"(can either leave this as is or enter specific information)". I don't object to the CT, just feel like that part should be final before approval."

kabp3 (07/21/20 1:24 pm): Rollback: Fix comments from Steve Raper

Program Change Request

Date Submitted: 07/08/20 2:14 pm

Viewing: SFTYENG-CT : Safety Engineering

File: 335.6

Last approved: 07/11/19 11:22 am

Last edit: 07/08/20 2:14 pm

Changes proposed by: luksc

Catalog Pages Using this Program
[Engineering Management](#)

Start Term
Fall 2019
Program Code
SFTYENG-CT
Department
ENG MGT
Title
Safety Engineering

Approval Path

1. 07/21/20 9:01 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
2. 07/23/20 9:16 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
3. 08/03/20 9:30 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post

History

1. Jul 10, 2019 by Crystal Wilson (wilsoncry)
2. Jul 10, 2019 by Crystal Wilson (wilsoncry)

Program Requirements and Description

Safety Engineering

Safe engineering systems protect the health of workers and the public, preserve the environment, and improve the profitability of industrial facilities. The graduate certificate in safety engineering is a program of study that focuses on methods to reduce risks, prevent accidents, and/or mitigate the consequences to acceptable levels. Risk reduction is accomplished by identifying hazards with unacceptable consequences and then reducing the probability of occurrence (accident reduction) and/or reducing the consequences to acceptable levels (mitigation). The program of study consists of four courses: two required core courses and two courses selected from a specialization track.

Requires two core courses and two courses selected from a track		
Core Courses:		
ENG MGT 4312/CHEM ENG 5130	Risk Assessment and Reduction	3
ENG MGT 5316	Safety Engineering Management	3
Available Specialization Tracks:		
Track 1: Chemical/Metallurgical Process Safety		
Required:		
~~CHEM ENG 5140~~	~~Course CHEM ENG 5140 Not Found~~	~~3~~
CHEM ENG 6241	**Intermediate Chemical Process Safety**	**3**
Choose one course from the following:		
~~CHEM ENG 5305~~	~~Hazardous Materials Management~~	~~3~~
CHEM ENG 5190/ELEC ENG 5350	Plantwide Process Control	3
IS&T 5885	Human-Computer Interaction	3
MET ENG 5630	Environmental Aspects Of Metals Manufacturing	3
Track 2: Safety Engineering Management		
ENG MGT 5713	Management And Methods In Reliability	3
SYS ENG 6110	Optimization under Uncertainty	3
Track 3: Process Control Systems		
Choose two courses from the following:		
ELEC ENG 5870	Mechatronics	3

ELEC ENG 5350/CHEM ENG 5190	Plantwide Process Control	3
ELEC ENG 5340	Advanced PLC	3
CHEM ENG 5140	Course CHEM ENG 5140 Not Found	3
CHEM ENG 6241	**Intermediate Chemical Process Safety**	**3**
COMP ENG 5420	Introduction to Network Security	3
Track 4: Nuclear Process Safety		
Choose two courses from the following:		
IS&T 5885	Human-Computer Interaction	3
NUC ENG 4207	Nuclear Fuel Cycle	3
NUC ENG 4229	Nuclear Power Plant Systems	3
NUC ENG 4347	Radiological Engineering	3
NUC ENG 4281	Probabilistic Risk Assessment I	3
NUC ENG 6223	Nuclear Reactor Safety	3
Track 5: Nuclear Material Safety		
Required:		
NUC ENG 4312	Nuclear Radiation Measurements and Spectroscopy	3
Choose one course from the following:		
NUC ENG 4207	Nuclear Fuel Cycle	3
NUC ENG 4347	Radiological Engineering	3
NUC ENG 4363	Applied Health Physics	3
NUC ENG 6331	Radiation Shielding	3
Track 6: Radiological Health & Safety		
Required:		
NUC ENG 4363	Applied Health Physics	3
Choose one course from the following:		
NUC ENG 4207	Nuclear Fuel Cycle	3
NUC ENG 4312	Nuclear Radiation Measurements and Spectroscopy	3
NUC ENG 4347	Radiological Engineering	3
NUC ENG 6331	Radiation Shielding	3
Track 7: Human Factors		
Required:		
ENG MGT 4330	Human Factors	3
Choose one course from the following:		
BIO SCI 4383	Toxicology	3
PSYCH 4700	Industrial Psychology	3

PSYCH 4730	Environmental Psychology	3
Track 8: Reliability		
Choose two courses from the following:		
ENG MGT 5713	Management And Methods In Reliability	3
STAT 5353	Statistical Data Analysis	3
STAT 6570	Theory Of Reliability	3

Justification for request

ChemEng 5140 is not being offered, it has been replaced by ChemEng 6241. ChemEng 5305 is now a 1-credit course, so no longer appropriate for this certificate.

Supporting Documents

Course Reviewer Comments

Course Change Request

New Experimental Course Proposal

Date Submitted: 05/26/20 10:21 pm

Viewing: **CIV ENG 6001.007 : Characterization and Modeling of Cement-Based Materials**

File: 4722

Last edit: 08/03/20 9:09 am

Changes proposed by: mahon

Requested Effective Change Date	Spring 2021
Department	Civil, Architectural, and Environmental Engineering
Discipline	Civil Engineering (CIV ENG)
Course Number	6001
Topic ID	007
Experimental Title	
Experimental Abbreviated Course Title	Cement Characterization
Instructors	Hongyan Ma

Approval Path

1. 05/27/20 11:49 am
   Joel Burken (burken): Approved for RCIVILEN Chair
2. 06/09/20 3:11 pm
   Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 07/23/20 9:15 am
   Stephen Raper

Characterization and Modeling of Cement-Based Materials

Experimental
Catalog
Description

The microstructure of cement-based materials manifests itself at multiple length scales, which determines the engineering properties, such as strength and permeability. How to characterize and model the microstructure at different scales, and how to simulate/derive properties based on microstructure will be introduced.

Prerequisites
  None

Field Trip
Statement

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

Justification for
new course:

Graduate students are interested in cementitious materials for constructions of civil infrastructure, military infrastructure, energy infrastructure, and even aerospace infrastructure. So it is necessary to develop a new course about the basic

methodology to do fundamental research regarding cementitious materials and cement-based materials. The new course may benefit graduate students not only from civil engineering, but also from materials science, chemical engineering, petroleum engineering, mechanical and aerospace engineering, mining engineering, etc.

Semester(s)
previously taught
  None

Co-Listed
Courses:

Course Reviewer
Comments

sraper (07/21/20 12:14 pm): modified justification to more implicitly indicate the course is for graduate students, not faculty. This was an objection from the DSCC.

Key: 4722

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 05/26/20 3:56 pm

Viewing: **COMP ENG 6001.006 : Adaptive Resonance Theory and Applications**

File: 4721

Last edit: 08/03/20 9:37 am

Changes proposed by: mlr6xd

Requested Effective Change Date	Fall 2020
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	6001
Topic ID	006
Experimental Title	
Experimental Abbreviated Course Title	Adapt Res Theory
Instructors	Donald Wunsch

Adaptive Resonance Theory and Applications
Experimental

Catalog
Description

This course will cover advanced topics in adaptive resonance theory (ART), including clustering, biclustering, supervised learning, reinforcement learning, and a variety of image and data analysis techniques built on ART. Students will also encounter case studies of the predictive power of ART and related theories regarding learning mechanisms.

Prerequisites

A graduate course in neural networks, clustering, neuroscience or computational intelligence, and strong aptitude for and interest in original research

Field Trip
Statement

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

Justification for
new course:

This topic is attracting thousands of papers and has been applied successfully in many applications, but we have no course like it. A recent survey of innovative publications in ART is:

Leonardo Enzo Brito da Silva, Islam Elnabarawy and Donald C. Wunsch II, "A Survey of Adaptive Resonance Theory Neural Network Models for Engineering Applications," Neural Networks Special Issue In Honor of the 80th Birthday of Stephen Grossberg, Vol.120, December 2019, pp. 167-210. DOI: 10.1016/j.neunet.2019.09.012

Semester(s)
previously taught
  none

Co-Listed
Courses:
  ELEC ENG 6001 - Special Topics

Course Reviewer
Comments

Key: 4721

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 05/04/20 12:25 am

Viewing: **COMP SCI 5001.008 : Computer Science BootCamp Part 1**

File: 4709

Last edit: 08/03/20 9:27 am

Changes proposed by: zhupe

Requested Effective Change Date	Fall 2020
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	5001
Topic ID	008
Experimental Title	
Experimental Abbreviated Course Title	CS BootCamp 1
Instructors	Ricardo Morales

Approval Path

1. 05/04/20 8:08 am Bruce McMillin (ff): Approved for RCOMPSCI Chair
2. 06/09/20 3:13 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 07/23/20 9:15 am Stephen Raper (sraper): Approved for

Engineering DSCC
Chair

4. 08/03/20 9:27 am
   Kristy Giacomelli-
   Feys (kristyg):
   Approved for
   Pending CCC
   Agenda post

Computer Science BootCamp Part 1
Experimental
Catalog
Description

This non-credit course prepares the non-computer science engineers or natural science educated students, with no computing background, for the pathway to a Master in Computer Science at Missouri S&T. Topics covered include Problem Solving with Computing with Python, Discrete Mathematics, The C++ Programming Language, and Data Structures.

Prerequisites
None

Field Trip
Statement
None

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

Justification for
new course:

Many of the incoming and prospective graduate students in Computer Science do not have a Computer Science background. This course will prepare them with the necessary background knowledge to make a successful transition to a graduate degree in Computer Science.

Semester(s)
previously taught

  None

Co-Listed
Courses:

Course Reviewer
Comments

  kristyg (06/09/20 3:13 pm): This was submitted too late for Sumerr 2020 deadline.

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 05/04/20 12:26 am

Viewing: **COMP SCI 5001.009 : Computer Science BootCamp Part 2**

File: 4710

Last edit: 08/03/20 9:28 am

Changes proposed by: zhupe

Requested Effective Change Date	Fall 2020
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	5001
Topic ID	009
Experimental Title	
Experimental Abbreviated Course Title	CS BootCamp 2
Instructors	Ricardo Morales

Approval Path

1. 05/04/20 8:09 am Bruce McMillin (ff): Approved for RCOMPSCI Chair
2. 06/09/20 3:14 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 07/23/20 9:15 am Stephen Raper (sraper): Approved for

Engineering DSCC
Chair

4. 08/03/20 9:28 am
   Kristy Giacomelli-
   Feys (kristyg):
   Approved for
   Pending CCC
   Agenda post

Computer Science BootCamp Part 2

Experimental

Catalog
Description
  This non-credit course prepares the non-computer science engineers or natural
  science educated students, with no computing background, for the pathway to a
  Master in Computer Science at Missouri S&T. Topics covered include Algorithms,
  Computer Architecture, Operating Systems and Databases.

Prerequisites
  Computer Science BootCamp Part 1.

Field Trip
Statement
  None

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

Justification for
new course:
  Many of the incoming and prospective graduate students in Computer Science do
  not have a Computer Science background. This course will prepare them with the
  necessary background knowledge to make a successful transition to a graduate
  degree in Computer Science.

Semester(s)
previously taught

None

Co-Listed
Courses:

Course Reviewer
Comments

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 06/08/20 5:36 pm

Viewing: **MECH ENG 5001.005 :**

Neuromechanics of Human Movement

File: 4723

Last edit: 08/03/20 9:29 am

Changes proposed by: nisbett

Requested Effective Change Date	Fall 2020
Department	Mechanical & Aerospace Engineering
Discipline	Mechanical Engineering (MECH ENG)
Course Number	5001
Topic ID	005
Experimental Title	
Experimental Abbreviated Course Title	Neuromech Human Movement
Instructors	Yun-Seong Song

In Workflow

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

Approval Path

1. 06/08/20 5:37 pm J. Keith Nisbett (nisbett): Approved for RMECHENG Chair
2. 06/09/20 3:17 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 07/23/20 9:16 am Stephen Raper (sraper):

Neuromechanics of Human Movement
Experimental

Catalog
Description

To guide engineering designs and implementations for human users, this course presents a broad overview of the human sensory-motor behavior and the neural/physical factors that affect human movement. Topics include a survey of the human sensorimotor system, dynamics of human movement, experimental techniques, and case studies of human-machine interaction.

Prerequisites

Mech Eng 4479 or equivalent

Field Trip
Statement

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

Justification for
new course:

This is a topic of significant interest for developing field of bio-related robotics.

Semester(s)
previously taught

None

Co-Listed
Courses:

Course Reviewer
Comments

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 07/30/20 4:48 pm

Viewing: **MUSIC 2001.004 : The Heart of Rock n' Roll**

File: 4734

Last edit: 08/03/20 9:35 am

Changes proposed by: karmannc

Requested Effective Change Date	Spring 2021
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	2001
Topic ID	004
Experimental Title	
Experimental Abbreviated Course Title	Heart of Rock n' Roll
Instructors	David Samson

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. CAT entry
8. Registrar

Approval Path

1. 07/30/20 5:56 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 08/03/20 9:07 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary

The Heart of Rock n' Roll

Experimental
Catalog
Description

Explore the development of popular music genres from early rhythm & blues
through the 50s (Elvis and Chuck Berry), 60s (the British Invasion and Woodstock),
70s (experimental rock and disco), 80s (punk, new wave and hair bands), 90s
(gangster rap, grunge, boy bands) and today.

Prerequisites

Any 1000 level Music course (may be taken concurrently), or permission from the
instructor

Field Trip
Statement

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

Justification for
new course:

This course will add more variety in the music minor curriculum. It is also a topic that has a greater appeal to current students and thus should have a wide audience not only for music minors, but for the larger university population.

Semester(s)
previously taught

Co-Listed
Courses:

Course Reviewer
Comments

Key: 4734

Course Change Request

New Experimental Course Proposal

Date Submitted: 05/09/20 4:44 pm

Viewing: **STAT 5001.003 : Computational Bayesian Methods using Python**

File: 4715

Last edit: 08/03/20 9:31 am

Changes proposed by: paigero

Requested Effective Change Date	Spring 2021
Department	Mathematics & Statistics
Discipline	Statistics (STAT)
Course Number	5001
Topic ID	003
Experimental Title	
Experimental Abbreviated Course Title	Computational Bayes
Instructors	Robert Paige

Approval Path

1. 05/14/20 9:38 pm vsam: Approved for RMATHEMA Chair
2. 06/09/20 3:17 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 06/24/20 1:01 pm Katie Shannon (shannonk):

Approved for
Sciences DSCC
Chair

4. 08/03/20 9:31 am
Kristy Giacomelli-
Feys (kristyg):
Approved for
Pending CCC
Agenda post

Computational Bayesian Methods using Python

Experimental
Catalog
Description

An introduction to Bayesian data analytic tools implemented in the Python programming language and their appropriate and effective use. The focus of the course is on the computational strategies and algorithms for Bayesian models and a discussion of theoretical underpinnings of the methods implemented.

Prerequisites

One of Stat 3113 or 3115 or 3117 or 5643; and one of Stat 5346 or 5353 or 6841 or 6343 or 6344 or 6545

Field Trip
Statement

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

Justification for
new course:

In theory, Bayesian statistics is very simple. With the specification of a likelihood function and a prior distribution one can always obtain predictions, intervals of estimate and numerous other statistical quantities with a direct probabilistic interpretations; if one can performed the required integrations. Unfortunately,

integrals that one encounters outside of a few classical problems cannot be evaluated in closed-form or easily approximated. The computational strategies and algorithms are specifically designed to approximate these intractable integrals in an efficient way.

This course will cover a basic treatment of hierarchical models, linear and generalized linear models, mixture models, Bayesian Causal Inference, nonparametric Bayes methods and Bayesian calibration of computer models. The numerical methods considered will include Markov Chain Monte Carlo, Importance Sampling, the Metropolis-Hastings Algorithm, and Gibbs Sampling and Convergence Diagnostics. Laplace approximations and other analytic approximations will also be considered.

Semester(s)
previously taught

  Not previously taught

Co-Listed
Courses:

Course Reviewer
Comments

Course Change Request

New Experimental Course Proposal

Date Submitted: 05/14/20 7:09 pm

Viewing: **STAT 5001.004 : Design and Analysis of Clinical Trials**

File: 4719

Last edit: 08/03/20 9:31 am

Changes proposed by: paigero

Requested Effective Change Date	Fall 2020
Department	Mathematics & Statistics
Discipline	Statistics (STAT)
Course Number	5001
Topic ID	004
Experimental Title	
Experimental Abbreviated Course Title	Clinical Trials
Instructors	Robert Paige

Approval Path

1. 05/14/20 9:38 pm vsam: Approved for RMATHEMA Chair
2. 06/09/20 3:17 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 06/24/20 1:02 pm Katie Shannon (shannonk):

Approved for
Sciences DSCC
Chair

4. 08/03/20 9:31 am
Kristy Giacomelli-
Feys (kristyg):
Approved for
Pending CCC
Agenda post

Design and Analysis of Clinical Trials
Experimental
Catalog
Description

An introduction to clinical trials and their design; Phase I, II, and III designs; ethical issues; stopping rules; interim analysis; statistical modeling of trial data; adaptive randomization and designs; equivalence testing; baseline assessment; further issues in the analysis clinical trials data.

Prerequisites

One of Stat 3113 or 3115 or 3117 or 5643; and one of Stat 5346 or 5353 or 6841 or 6343 or 6344 or 6545.

Field Trip
Statement

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

Justification for
new course:

A clinical trial is a research study using consenting human subjects that tests the effectiveness and safety of a treatment, a diagnostic tool, or a preventative intervention. As such they are key source of data for the Data Scientist. The importance of the class is emphasized by the on-going Covid-19 global pandemic.

This course would be of interest to students in statistics, human factors research, psychology, and the biological sciences.

Semester(s)
previously taught
    none.

Co-Listed
Courses:

Course Reviewer
Comments

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 05/14/20 6:35 pm

Viewing: **STAT 5001.005 : Foundations of Statistical Learning**

File: 4717

Last edit: 08/03/20 9:33 am

Changes proposed by: paigero

Requested Effective Change Date	Fall 2020
Department	Mathematics & Statistics
Discipline	Statistics (STAT)
Course Number	5001
Topic ID	005
Experimental Title	
Experimental Abbreviated Course Title	Statistical Learning
Instructors	Robert Paige

Approval Path

1. 05/14/20 9:38 pm vsam: Approved for RMATHEMA Chair
2. 06/09/20 3:18 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 06/24/20 1:03 pm Katie Shannon (shannonk):

Approved for
Sciences DSCC
Chair

4. 08/03/20 9:33 am
Kristy Giacomelli-
Feys (kristyg):
Approved for
Pending CCC
Agenda post

Foundations of Statistical Learning

Experimental
Catalog
Description

An introduction to the statistical foundations of data-analytic techniques commonly used in Data Mining and the analysis of Big Data, including spline and kernel methods, principal component analysis, dimension reduction, neural networks, tree-based methods, nearest neighbors methods, support vector machines, bagging and boosting.

Prerequisites

Math 2222, Math 3108 and one of Stat 3113 or 3115 or 3117 or 5643

Field Trip
Statement

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

Justification for
new course:

Data Mining and Big Data are part of what many consider to be a revolution in the data sciences and as such have generated much interest. The techniques covered in Statistical Learning provide access to much of what is going on in Data Mining and Big Data.

Semester(s)
previously taught

  None.

Co-Listed
Courses:

Course Reviewer
Comments

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 05/14/20 6:59 pm

Viewing: **STAT 5001.006 : Design and Analysis of Epidemiologic Studies**

File: 4718

Last edit: 08/03/20 9:32 am

Changes proposed by: paigero

Requested Effective Change Date	Fall 2020
Department	Mathematics & Statistics
Discipline	Statistics (STAT)
Course Number	5001
Topic ID	006
Experimental Title	
Experimental Abbreviated Course Title	Statistical Epidemiology
Instructors	Robert Paige

Approval Path

1. 05/14/20 9:38 pm vsam: Approved for RMATHEMA Chair
2. 06/09/20 3:18 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 06/24/20 1:03 pm Katie Shannon (shannonk):

Approved for
Sciences DSCC
Chair
4. 08/03/20 9:32 am
Kristy Giacomelli-
Feys (kristyg):
Approved for
Pending CCC
Agenda post

Design and Analysis of Epidemiologic Studies
Experimental
Catalog
Description

An introduction to epidemiological studies; potential outcomes; causality; adjustment for confounding, selection bias and measurement bias.

Prerequisites

One of Stat 3113 or 3115 or 3117 or 5643

Field Trip
Statement

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

Justification for
new course:

The justification for this course is two-fold. First, of course is the on-going Covid-19 global pandemic and the need for future Data Scientists to be educated in epidemiology. Second, this course will cover statistical causation in detail which in and of itself will be of interest to Data Scientists. In this same vein, this course would also be of interest to any student who would like to gain a better understanding of how to interpret the results of a statistical data analysis and/or would like to gain knowledge of how to perform causal data analyses.

Semester(s)
previously taught

 none.

Co-Listed
Courses:

Course Reviewer
Comments

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 05/14/20 6:28 pm

Viewing: **STAT 5001.007 : Statistical Shape Analysis**

File: 4716

Last edit: 08/03/20 9:33 am

Changes proposed by: paigero

Requested Effective Change Date	Fall 2020
Department	Mathematics & Statistics
Discipline	Statistics (STAT)
Course Number	5001
Topic ID	007
Experimental Title	
Experimental Abbreviated Course Title	Shape Analysis
Instructors	Robert Paige

Approval Path

1. 05/14/20 9:38 pm vsam: Approved for RMATHEMA Chair
2. 06/09/20 3:18 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 06/24/20 1:05 pm Katie Shannon (shannonk):

Approved for
Sciences DSCC
Chair
4. 08/03/20 9:33 am
Kristy Giacomelli-
Feys (kristyg):
Approved for
Pending CCC
Agenda post

Statistical Shape Analysis

Experimental
Catalog
Description

Statistical shape analysis considers random objects where location, rotation and scale information is removed. This is a new area of statistics that has a huge variety of novel applications in many areas of science including agriculture, archeology, bioinformatics, biology, computer science, engineering, genetics, geography, geology and medicine.

Prerequisites

MATH 2222 and one of Stat 3113 or 3115 or 3117 or 5643

Field Trip
Statement

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

Justification for
new course:

This is a novel area of statistics which is very interdisciplinary and should be of interest to students in a variety of STEM fields

Semester(s)
previously taught

  None

Co-Listed
Courses:

Course Reviewer
Comments

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 05/08/20 12:57 am

Viewing: **STAT 5001.008 : Topological Data Analysis**

File: 4711

Last edit: 08/03/20 9:34 am

Changes proposed by: paigero

Requested Effective Change Date	Spring 2021
Department	Mathematics & Statistics
Discipline	Statistics (STAT)
Course Number	5001
Topic ID	008
Experimental Title	
Experimental Abbreviated Course Title	TDA
Instructors	Robert Paige

Approval Path

1. 05/08/20 9:03 am vsam: Approved for RMATHEMA Chair
2. 06/09/20 3:18 pm Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 06/24/20 1:05 pm Katie Shannon (shannonk):

Approved for
Sciences DSCC
Chair

4. 08/03/20 9:34 am
Kristy Giacomelli-
Feys (kristyg):
Approved for
Pending CCC
Agenda post

Topological Data Analysis

Experimental
Catalog
Description

Topological data analysis is concerned with the topological structure of large and
complex data sets using select tools from computational topology. This course will
provide an intuitive overview of relevant concepts from topology and applications of
the Mapper algorithm and persistent homology to data types such as point clouds,
digital images and networks

Prerequisites

MATH 3108 Linear Algebra I
Some programming experience

Field Trip
Statement

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

Justification for
new course:

Topological data analysis approaches data science with a tools developed from
algebraic topology. As a result it is based upon mathematics that are quite different
from those used in the development of more classical data analysis techniques. As a

result it can used in situations where classical methods fail. It is especially useful in situations where the data has a meaningful complex structure that is not easily modelled using standard data analysis methods.

Semester(s)
previously taught
  Not previously taught

Co-Listed
Courses:

Course Reviewer
Comments