



**Minutes of the Campus Curricula Committee Meeting**

**April 13, 2021**

**8:00am, Virtual Zoom**

**(For Faculty Senate Meeting of April 29, 2021)**

**Attendees:** Steve Raper, Petra Dewitt, Katie Shannon, Michael Gosnell, Cecil Eng Huang Chua, Michael Davis, Kyle Perry, Kristy Giacomelli-Feys, Marita Tibbetts

The following curriculum forms were discussed and approved:

**Course Change Forms:**

File: 942.6 ARCH ENG 4800 : Principles of HVAC I  
File: 437.4 BIO SCI 1213 : Principles of Biology  
File: 1399.1 BIO SCI 5313 : Pathogenic Microbiology  
File: 2618.1 CER ENG 4310 : Ceramic Processing  
File: 1801.6 CHEM ENG 3100 : Chemical Engineering Fluid Flow  
File: 2306.6 CHEM ENG 3110 : Chemical Engineering Heat Transfer  
File: 4279.25 CHEM ENG 3111 : Numerical Computing in Chemical and Biochemical Engineering  
File: 2310.5 CHEM ENG 3130 : Staged Mass Transfer  
File: 1526.6 CHEM ENG 3140 : Continuous Mass Transfer  
File: 1038.10 CHEM ENG 3150 : Chemical Engineering Reactor Design  
File: 1479.4 CHEM ENG 3160 : Molecular Chemical Engineering  
File: 4285.16 CHEM ENG 4091 : Chemical Process Design I  
File: 1083.1 CHEM ENG 4096 : Chemical Engineering Economics  
File: 862.20 CHEM ENG 4097 : Chemical Process Design II  
File: 1394.1 CHEM ENG 4100 : Chemical Engineering Laboratory I  
File: 2072.8 CHEM ENG 4110 : Chemical Engineering Process Dynamics And Control  
File: 383.1 CHEM ENG 4120 : Process Dynamics And Control Laboratory  
File: 792.10 CHEM ENG 4130 : Chemical Engineering Laboratory II  
File: 797.13 CHEM ENG 4220 : Biochemical Reactor Laboratory  
File: 4252.5 CHEM ENG 4230 : Bioprocess Safety  
File: 4310.4 CHEM ENG 5220 : Intermediate Engineering Thermodynamics  
File: 2048.2 CHEM ENG 5305 : Hazardous Materials Management  
File: 1392.7 COMP ENG 4096 : Computer Engineering Senior Project I  
File: 4752 COMP SCI 6407 : Internet of Things with Data Science  
File: 4797 EDUC 3298 : Teacher Field Experience III



File: 1839.8	EDUC 3340 : Assessment of Student Learning
File: 2214.13	ELEC ENG 4096 : Electrical Engineering Senior Project I
File: 1840.1	ELEC ENG 5820 : Introduction to Neural Networks and Applications
File: 4796	GEOPHYS 6221 : Advanced Geophysical Data Analysis
File: 2030.1	IS&T 4257 : Global Digital Economy
File: 765.5	MECH ENG 2519 : Thermodynamics
File: 1968.8	MUSIC 3251 : From the Church to the Palace: Music of the Middle Ages and Renaissance
File: 1656.7	MUSIC 3252 : Kings, Queens, and Guillotines: History of Music in the Enlightenment and Beyond
File: 2294.1	NUC ENG 4257 : Two-phase Flow in Energy Systems – I
File: 453.1	NUC ENG 4281 : Probabilistic Risk Assessment
File: 595.1	NUC ENG 4428 : Reactor Laboratory I
File: 1601.1	NUC ENG 5281 : Introduction to Probabilistic Risk Assessment
File: 617.1	NUC ENG 5428 : Reactor Laboratory I
File: 1652.1	NUC ENG 5438 : Reactor Laboratory II
File: 4725.15	PSYCH 4340 : Assessment of Student Learning
File: 4359.10	PSYCH 6602 : Employee Affect and Behavior
File: 4081.6	PSYCH 6702 : Personnel Selection
File: 484.5	SYS ENG 5212 : Introduction to Neural Networks and Applications

## **Program Change Forms:**

File: 142.52	AP MATH-BS : Applied Mathematics BS
File: 150.82	CH ENG-BS : Chemical Engineering BS
File: 157.29	HIST-BA : History BA
File: 86.46	MC ENG-BS : Mechanical Engineering BS
File: 192.43	PSYCH-BA : Psychology BA
File: 193.44	PSYCH-BS : Psychology BS
File: 334.1	PRJ MGT-CT : Project Management CT
File: 305.5	PSYMTRP-CT : Statistical Methods Psych CT

## **Experimental Course forms:**

File: 4785	CHEM ENG 5001.014 : Applications of Computational Fluid Dynamics
File: 4787	CHEM ENG 5001.016 : Drug and Gene Delivery Systems
File: 4786	COMP SCI 4001.004 : Internet Services
File: 4799	GEO ENG 6001.006 : Advanced Remote Sensing Methods in Hydrology
File: 4795	MUSIC 2001.005 : Music and the World Wars
File: 4791	SPANISH 4001.001 : Literature, Science, and Technology in Contemporary Spanish-Speaking Cultures
File: 4798	STAT 4001.001 : Introduction to Statistical Data Science
File: 4793	TCH COM 5001.003 : AI and Smart Technology Communication



**Name Change Forms:**

5 : School of Earth and Minerals

6 : School of Earth and Minerals

The meeting adjourned at 8:57 am.

A handwritten signature in black ink that reads "Stephen A. Raper".

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Stephen A. Raper, Chair  
Missouri S&T Campus Curricula Committee

# Course Change Request

Date Submitted: 03/08/21 4:08 pm

Viewing: **ARCH ENG 4800 : Principles of HVAC I**

File: 942.6

Last approved: 10/12/20 6:01 am

Last edit: 03/12/21 12:04 pm

Changes proposed by: seelyj

Programs  
referencing this  
course

- [ARC ENG-BS: Architectural Engineering BS](#)
- [BLD SYS-CT: Building Systems Engineering CT](#)

Requested **Spring 2022** ~~Fall 2018~~  
Effective Change  
Date

Department Civil, Architectural, and Environmental Engineering

Discipline Architectural Engineering (ARCH ENG)

Course Number 4800

Title  
Principles of HVAC I

Abbreviated Principles of HVAC I  
Course Title

Catalog  
Description

## In Workflow

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

## Approval Path

1. 03/12/21 11:55 am  
Joel Burken (burken):  
Approved for RCIVILEN Chair
2. 03/12/21 12:04 pm  
Marita Tibbetts (tibbettsmg):



Approved for CCC  
Secretary

3. 03/18/21 8:14 am

Stephen Raper  
(sraper):

Approved for  
Engineering DSCC  
Chair

4. 03/24/21 8:38 am

Marita Tibbetts  
(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:26

am

Marita Tibbetts  
(tibbettsmg):

Approved for CCC  
Meeting Agenda

6. 04/13/21 10:59

am

Stephen Raper  
(sraper):

Approved for  
Campus Curricula  
Committee Chair

## History

1. Jul 9, 2018 by

baur (942.1)

2. Oct 12, 2020 by

tibbettsmg  
(942.5)

Heating, ventilating, and air conditioning principles related to the heat loss and heat gain calculations for commercial buildings. Calculations will be performed manually and using current computer software. Analysis and specification of the building envelope components, with an emphasis on improving energy efficiency by reducing heating and cooling loads

#### Prerequisites

Mech Eng 2527 and **preceded or accompanied by** Civ Eng 3330.

#### 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:

Currently CE 3330 Fluid Mechanics is a prerequisite for ArchE 4800. The instructor shared that he does not get into any fluid mechanics material until the last few weeks of the semester, so it was recommended that CE 3330 be made a co-requisite for ArchE 4800.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer  
Comments



# Course Change Request

Date Submitted: 03/10/21 11:17 am

Viewing: **BIO SCI 1213 : Principles of Biology**

File: 437.4

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

Last edit: 03/12/21 12:24 pm

Changes proposed by: shannonk

## Programs

referencing this

course

[PRE-MED-MI: Pre-Medicine Minor](#)

[BIO SC-BA: Biological Sciences BA](#)

[BIO SC-BS: Biological Sciences BS](#)

[PROPOSED: Computational Health Minor](#)

[PROPOSED: Education](#)

[PROPOSED: Biological Sciences BS with Emphasis area in  
Medical Laboratory Scientist](#)

[GEOL-MI: Geology Minor](#)

## Other Courses

referencing this

course

In The Prerequisites:

[BIO SCI 1219 : General Biology Lab](#)

[BIO SCI 2243 : Sleep: Function and Dysfunction](#)

[BIO SCI 2252 : Vegetation of the Ozarks](#)

[BIO SCI 2263 : Ecology](#)

[BIO SCI 2333 : Nutrition](#)

[BIO SCI 2372 : Issues in Public Health](#)

[BIO SCI 2383 : Plant Biology](#)

## In Workflow

1. **RBIOLSCI Chair**

2. **CCC Secretary**

3. **Sciences DSCC  
Chair**

4. **Pending CCC  
Agenda post**

5. **CCC Meeting  
Agenda**

6. **Campus Curricula  
Committee Chair**

7. **FS Meeting  
Agenda**

8. Faculty Senate  
Chair

9. Registrar

10. CAT entry

11. Peoplesoft

## Approval Path

1. 03/12/21 12:17  
pm

David Duvernell  
(duvernellid):

Approved for  
RBIOLSCI Chair

2. 03/12/21 12:25  
pm

Marita Tibbetts  
(tibbettsmg):

[BIO SCI 3333 : Human Anatomy and Physiology I](#)

[BIO SCI 3343 : Human Anatomy and Physiology II](#)

[BIO SCI 5323 : Bioinformatics](#)

[COMP SCI 5700 : Bioinformatics](#)

Requested **Spring 2022** ~~08/14/2017~~

Effective Change  
Date

Department Biological Sciences

Discipline Biological Sciences (BIO SCI)

Course Number 1213

Title  
Principles of Biology

Abbreviated Principles of Biology  
Course Title

Catalog  
Description

**This course will investigate biological concepts including** ~~A comprehensive study of~~  
the **chemical basis for life,** ~~general principles of~~ the **structure** ~~biology of plants,~~

Approved for CCC  
Secretary

3. 03/19/21 12:48  
pm

Katie Shannon  
(shannonk):

Approved for  
Sciences DSCC  
Chair

4. 03/24/21 8:39 am

Marita Tibbetts  
(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:26  
am

Marita Tibbetts  
(tibbettsmg):

Approved for CCC  
Meeting Agenda

6. 04/13/21 10:59  
am

Stephen Raper  
(sraper):

Approved for  
Campus Curricula  
Committee Chair

## History

1. Jan 13, 2017 by  
shannonk (437.1)

~~animals, and function of molecules protists including population biology and cells, cellular metabolism and enzyme activity, bioenergetics, cellular reproduction and communication, genetics, evolution and the scientific process. regulation mechanisms. An in-depth study of the fundamental principles governing all living organisms from the molecular to the population level. Required for Biological Sciences majors.~~ Cannot also receive credit for Bio Sci 1113.

#### Prerequisites

Biological Science majors only.

#### 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:

Instructor and Chair agree that the new description better fits what is taught in the course.

Semesters previously offered as an experimental course

#### Co-Listed Courses:

Course Reviewer  
Comments



# Course Change Request

Date Submitted: 02/08/21 12:25 pm

Viewing: **BIO SCI 5313 : Pathogenic Microbiology**

File: 1399.1

Last edit: 02/08/21 1:06 pm

Changes proposed by: djwesten

Programs  
referencing this  
course

- [PROPOSED: Biological Sciences BS with Emphasis area in Medical Laboratory Scientist](#)
- [EV ENG-BS: Environmental Engineering BS](#)

Requested **Spring 2022 08/14/2018**  
Effective Change  
Date

Department Biological Sciences  
Discipline Biological Sciences (BIO SCI)  
Course Number 5313

Title  
Pathogenic Microbiology

Abbreviated Pathogenic Microbiology  
Course Title

Catalog  
Description

## In Workflow

- RBIOLSCI Chair**
- CCC Secretary**
- Sciences DSCC Chair**
- Pending CCC Agenda post**
- CCC Meeting Agenda**
- Campus Curricula Committee Chair**
- FS Meeting Agenda**
- Faculty Senate Chair
- Registrar
- CAT entry
- Peoplesoft

## Approval Path

- 02/08/21 12:31 pm  
David Duvernell (duvernell):  
Approved for  
RBIOLSCI Chair
- 02/08/21 1:06 pm  
Marita Tibbetts (tibbettsmg):



Approved for CCC  
Secretary

3. 02/19/21 1:03 pm

Katie Shannon

(shannonk):

Approved for  
Sciences DSCC  
Chair

4. 03/24/21 8:39 am

Marita Tibbetts

(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:26  
am

Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Meeting Agenda

6. 04/13/21 10:58  
am

Stephen Raper

(sraper):

Approved for  
Campus Curricula  
Committee Chair

A study of medically important microorganisms. Students will learn about the properties that enable organisms to cause disease as well as the disease process within the host. Special emphasis will be placed on recent advances in the molecular genetics of host pathogen interaction.

#### Prerequisites

Bio Sci **3313** ~~2213~~ or Civ Eng 2601.

## 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 change:

We would like to change the prerequisites for Pathogenic Microbiology to Bio Sci 3313 (Microbiology) instead of Bio Sci 2213 (Cell Biology). A strong background in microbiology is critical for success in the pathogenic microbiology course and will allow the instructor to introduce more advance concepts. Civ Eng 2601 remains an appropriate prerequisite as it covers material that is included in Bio Sci 3313.

## Semesters previously offered as an experimental course

## Co-Listed Courses:

## Course Reviewer Comments

**tibbettsmg (02/08/21 1:06 pm):** changed eff. term to SP22 due to affecting change.  
MT

Key: 1399

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/17/21 2:06 pm

Viewing: **CER ENG 4310 : Ceramic Processing**

File: 2618.1

Last edit: 03/18/21 8:17 am

Changes proposed by: smiller

Programs  
referencing this  
course

[CR ENG-BS: Ceramic Engineering BS](#)

Requested	Spring 2022 <del>08/14/2018</del>
Effective Change	
Date	
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	4310
Title	Ceramic Processing
Abbreviated	Ceramic Processing
Course Title	

Catalog  
Description

## In Workflow

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

## Approval Path

1. 03/17/21 2:08 pm  
Greg Hilmas (ghilmas):  
Approved for  
RMATSENG Chair
2. 03/17/21 3:42 pm  
Marita Tibbetts (tibbettsmg):  
Approved for CCC  
Secretary

3. 03/26/21 3:15 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
4. 03/29/21 11:04  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:26  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:58  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

**Rudimentary theory** ~~Powder, colloidal~~ and **practice of powder production, ceramic suspension rheology, sol-gel processing,** forming methods, drying, sintering and grain growth. Relation of processing steps to densification and microstructure development.

Prerequisites

**Cer Eng 3210 and** Senior standing.

Field Trip

Statement

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

Justification for  
change:

Changes reflect the current content of the course as taught recently.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**sraper (03/18/21 8:17 am):** Changed to required for majors.

Key: 2618

[Preview Bridge](#)

# Course Change Request

A deleted record cannot be edited

## Course Deactivation Proposal

Date Submitted: 03/09/21 3:45 pm

Viewing: **CHEM ENG 3100 : Chemical Engineering Fluid Flow**

File: 1801.6

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

Last edit: 03/09/21 4:07 pm

Changes proposed by: luksc

Programs  
referencing this  
course

[EV ENG-BS: Environmental Engineering BS](#)

Other Courses  
referencing this  
course

In The Prerequisites:

[CHEM ENG 3110 : Chemical Engineering Heat Transfer](#)

[CHEM ENG 4100 : Chemical Engineering Laboratory I](#)

[NUC ENG 4257 : Two-phase Flow in Energy Systems - I](#)

Requested **Fall 2021** ~~01/12/2016~~

Effective Change  
Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

### In Workflow

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

### Approval Path

1. 03/09/21 3:52 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
2. 03/09/21 3:56 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

Course Number 3100

Title

Chemical Engineering Fluid Flow

Abbreviated Fluid Flow

Course Title

Catalog

Description

3. 03/17/21 2:50 pm

Stephen Raper

(sraper):

Approved for

Engineering DSCC

Chair

4. 03/24/21 8:52 am

Marita Tibbetts

(tibbettsmg):

Approved for

Pending CCC

Agenda post

5. 04/13/21 10:26

am

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Meeting Agenda

6. 04/13/21 10:58

am

Stephen Raper

(sraper):

Approved for

Campus Curricula

Committee Chair

## History

1. May 4, 2015 by

luksc (1801.1)

Mass, energy, and momentum balance concepts in fluid flow are studied to provide a basis for study of flow measurement, fluid behavior, turbulent flow, dimensional analysis of fluid flows, and the study of some practical flow processes such as : filtration, fluidization, compressible flow, pipe networks.

Prerequisites

Chem Eng 2100 and Math 3304; Chem Eng majors only.

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:

Course is part of pre-2016 curriculum - not being offered anymore

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**tibbettsmg (03/09/21 4:07 pm):** NE 4257 prereq change is proposed and not on FS21 schedule. MT

Key: 1801

[Preview Bridge](#)



# Course Change Request

A deleted record cannot be edited

## Course Deactivation Proposal

Date Submitted: 03/09/21 3:46 pm

Viewing: **CHEM ENG 3110 : Chemical Engineering Heat Transfer**

File: 2306.6

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

Last edit: 03/09/21 4:08 pm

Changes proposed by: luksc

Programs  
referencing this  
course

[EV ENG-BS: Environmental Engineering BS](#)

Other Courses  
referencing this  
course

In The Prerequisites:

[CHEM ENG 4100 : Chemical Engineering Laboratory I](#)

Requested **Fall 2021** ~~01/12/2016~~

Effective Change  
Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 3110

### In Workflow

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

### Approval Path

1. 09/28/20 4:04 pm  
Kristy Giacomelli-Feys (kristyg):  
Rollback to Initiator
2. 09/30/20 10:55 am  
Hu Yang (huyang):

4/13/2021	CHEM ENG 3110: Chemical Engineering Heat Transfer	
Title	Chemical Engineering Heat Transfer	
Abbreviated	Heat Transfer	Approved for RCHEMENG Chair 3. 09/30/20 11:14 am Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
Course Title		
Catalog Description		4. 10/12/20 2:15 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair 5. 10/13/20 8:11 am Marita Tibbetts (tibbettsmg): Approved for Pending CCC Agenda post 6. 10/28/20 9:48 am Marita Tibbetts (tibbettsmg): Rollback to Initiator 7. 03/09/21 3:52 pm Hu Yang (huyang): Approved for RCHEMENG Chair 8. 03/09/21 4:08 pm Marita Tibbetts (tibbettsmg): Approved for CCC Secretary 9. 03/17/21 2:50 pm Stephen Raper

(sraper):

Approved for  
Engineering DSCC  
Chair

10. 03/24/21 8:53 am

Marita Tibbetts

(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

11. 04/13/21 10:26  
am

Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Meeting Agenda

12. 04/13/21 10:58  
am

Stephen Raper

(sraper):

Approved for  
Campus Curricula  
Committee Chair

### History

1. May 4, 2015 by  
luksc (2306.1)

Process principles of heat transfer in the chemical process industry. Steady and unsteady state heat conduction and radiation heat transfer. Free and forced convection and condensation and boiling heat transfer. Practical heat exchanger design.

### Prerequisites

Math 2222 and preceded or accompanied by Chem Eng 3100. Chem Eng majors only.

## Field Trip Statement

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

Justification for  
change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

## Course Reviewer Comments

**kristyg (09/28/20 4:04 pm):** Rollback: Change in dept chair

**tibbettsmg (10/28/20 9:48 am):** Rollback: resubmit in batch along with any CC requests that prereqs are affected by. MT

Key: 2306

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/09/21 3:38 pm

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

File: 4279.25

Last approved: 10/19/20 6:00 am

Last edit: 03/09/21 4:11 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](#)

[CHEM ENG 6180 : Advanced Applications of Computational Fluid Dynamics](#)

Requested Spring **2022** ~~2021~~

Effective Change

Date

Department Chemical and Biochemical Engineering

## In Workflow

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

## Approval Path

1. 03/09/21 3:53 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
2. 03/09/21 4:12 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

4/13/2021

CHEM ENG 3111: Numerical Computing in Chemical and Biochemical Engineering

Discipline	Chemical Engineering (CHEM ENG)	3. 03/18/21 8:14 am
Course Number	3111	Stephen Raper (sraper):
Title	Numerical Computing in Chemical and Biochemical Engineering	Approved for Engineering DSCC Chair
Abbreviated Course Title	Numerical Computing	4. 03/24/21 8:53 am
Catalog Description		Marita Tibbetts (tibbettsmg):
		Approved for Pending CCC Agenda post
		5. 04/13/21 10:27 am
		Marita Tibbetts (tibbettsmg):
		Approved for CCC Meeting Agenda
		6. 04/13/21 10:58 am
		Stephen Raper (sraper):
		Approved for Campus Curricula Committee Chair
		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)  
5. Oct 19, 2020 by  
luksc (4279.22)

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 Comp Sci 1500, or both Comp Sci 1570 and Comp Sci 1580, or both Comp Sci 1971 and Comp Sci 1981, or both Comp Sci 1972 and Comp Sci 1982; preceded or accompanied by Chem Eng 2100.

#### Field Trip Statement

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

#### Justification for change:

Better reflects the way the course is taught

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**tibbettsmg (03/09/21 4:11 pm):** eff date changed to Sp22. MT

Key: 4279

[Preview Bridge](#)



# Course Change Request

A deleted record cannot be edited

## Course Deactivation Proposal

Date Submitted: 03/09/21 3:46 pm

Viewing: **CHEM ENG 3130 : Staged Mass Transfer**

File: 2310.5

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

Last edit: 03/09/21 3:46 pm

Changes proposed by: luksc

Other Courses  
referencing this  
course

In The Prerequisites:

[CHEM ENG 3140 : Continuous Mass Transfer](#)

[CHEM ENG 4096 : Chemical Engineering Economics](#)

Requested **Fall 2021** ~~01/12/2016~~

Effective Change

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 3130

Title

Staged Mass Transfer

Abbreviated Staged Mass Transfer

Course Title

### In Workflow

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

### Approval Path

1. 09/28/20 4:04 pm  
Kristy Giacomelli-Feys (kristyg):  
Rollback to Initiator
2. 09/29/20 8:46 am  
Marita Tibbetts (tibbettsmg):

## Catalog Description

- Rollback to  
Initiator
3. 09/30/20 10:55  
am  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
4. 09/30/20 11:14  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
5. 10/12/20 2:15 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
6. 10/13/20 8:12 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
7. 10/28/20 9:47 am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to  
Initiator
8. 03/09/21 3:53 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
9. 03/09/21 4:04 pm  
Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Secretary

10. 03/17/21 2:51 pm

Stephen Raper

(sraper):

Approved for  
Engineering DSCC  
Chair

11. 03/24/21 8:53 am

Marita Tibbetts

(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

12. 04/13/21 10:27  
am

Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Meeting Agenda

13. 04/13/21 10:58  
am

Stephen Raper

(sraper):

Approved for  
Campus Curricula  
Committee Chair

## History

1. Jun 29, 2015 by  
luksc (2310.1)

Principles of equilibrium stage operations applied to distillation, liquid-liquid extraction, absorption, and leaching. Methods for estimating pressure drop and

stage efficiencies are also studied. Quantitative solutions to practical problems are stressed.

#### Prerequisites

Chem Eng 3120, admitted to Chem Eng program.

#### Field Trip

#### Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Required for

Yes

Majors

Elective for

No

Majors

Justification for  
change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer

Comments

**kristyg (09/28/20 4:04 pm):** Rollback: Change in dept chair

**tibbettsmg (09/29/20 8:46 am):** Rollback: Will you just try resubmitting this one to see if Dr. Yang can approve it?

**tibbettsmg (10/28/20 9:47 am):** Rollback: resubmit in batch along with any CC requests that prereqs are affected by. MT



# Course Change Request

A deleted record cannot be edited

## Course Deactivation Proposal

Date Submitted: 03/09/21 3:46 pm

Viewing: **CHEM ENG 3140 : Continuous Mass Transfer**

File: 1526.6

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

Last edit: 03/09/21 3:46 pm

Changes proposed by: luksc

Other Courses  
referencing this  
course

In The Prerequisites:

[CHEM ENG 3150 : Chemical Engineering Reactor Design](#)

Requested **Fall 2021** ~~01/12/2016~~

Effective Change  
Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 3140

Title  
Continuous Mass Transfer

Abbreviated Continuous Mass Transfer  
Course Title

### In Workflow

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

### Approval Path

1. 09/28/20 4:04 pm  
Kristy Giacomelli-Feys (kristyg):  
Rollback to Initiator
2. 09/30/20 10:55 am  
Hu Yang (huyang):

## Catalog Description

- Approved for  
RCHEMENG Chair
3. 09/30/20 11:15  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
4. 10/12/20 2:15 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
5. 10/13/20 8:13 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
6. 10/28/20 9:48 am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to  
Initiator
7. 03/09/21 3:53 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
8. 03/09/21 4:01 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
9. 03/17/21 2:51 pm  
Stephen Raper

(sraper):  
Approved for  
Engineering DSCC  
Chair

10. 03/24/21 8:54 am

Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post

11. 04/13/21 10:27  
am

Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda

12. 04/13/21 10:58  
am

Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

### History

1. May 4, 2015 by  
luksc (1526.1)

Fundamentals of diffusion and mass transfer applied to absorption, extraction, humidification, drying and filtration. Design and rating of continuous chemical separators.

### Prerequisites

Preceded or accompanied by Chem Eng 3130. Chem Eng majors only.

### 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:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**kristyg (09/28/20 4:04 pm):** Rollback: Change in dept chair

**tibbettsmg (10/28/20 9:48 am):** Rollback: resubmit in batch along with any CC requests that prereqs are affected by. MT

Key: 1526

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/09/21 3:28 pm

Viewing: **CHEM ENG 3150 : Chemical Engineering Reactor Design**

File: 1038.10

Last approved: 05/24/16 4:57 am

Last edit: 03/09/21 3:35 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 4091 : Chemical Process Design I](#)

[CHEM ENG 4097 : Chemical Process Design II](#)

[CHEM ENG 4110 : Chemical Engineering Process Dynamics And Control](#)

[CHEM ENG 4130 : Chemical Engineering Laboratory II](#)

[CHEM ENG 4140 : Chemical Process Safety](#)

[CHEM ENG 4210 : Biochemical Reactors](#)

[CHEM ENG 4241 : Process Safety in the Chemical and Biochemical Industries](#)

[CHEM ENG 5110 : Intermediate Chemical Reactor Design](#)

[CHEM ENG 5210 : Intermediate Biochemical Reactors](#)

## In Workflow

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

## Approval Path

1. 03/09/21 3:31 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
2. 03/09/21 3:36 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

Requested **Spring 2022** ~~08/14/2018~~

Effective Change  
Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 3150

Title  
Chemical Engineering Reactor Design

Abbreviated Chem Engr Reactor Design  
Course Title

Catalog  
Description

3. 03/18/21 8:14 am  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair

4. 03/24/21 8:54 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:27  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda

6. 04/13/21 10:58  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

### History

1. Jun 29, 2015 by luksc (1038.1)
2. May 24, 2016 by forcinit (1038.5)

The study of chemical reaction kinetics and their application to the design and operation of chemical and catalytic reactors.

Prerequisites

Preceded or accompanied by ~~either Chem Eng 3140 or Chem Eng 3200 or preceded by~~ both Chem Eng 3111 and Chem Eng 3101. Admitted to Chem Eng program.

Field Trip

Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Required for

Yes

Majors

Elective for

No

Majors

Justification for  
change:

Removed prerequisites from previous version of curriculum (pre 2016)

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer

Comments

**tibbettsmg (03/09/21 3:35 pm):** changed eff. date to Sp22. MT

Key: 1038

[Preview Bridge](#)

# Course Change Request

A deleted record cannot be edited

## Course Deactivation Proposal

Date Submitted: 03/09/21 3:47 pm

Viewing: **CHEM ENG 3160 : Molecular Chemical Engineering**

File: 1479.4

Last approved: 06/24/15 3:58 am

Last edit: 03/09/21 3:47 pm

Changes proposed by: luksc

Requested **Fall 2021 08/17/2015**

Effective Change

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 3160

Title

Molecular Chemical Engineering

Abbreviated Molecular Ch Eng

Course Title

Catalog

Description

### In Workflow

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

### Approval Path

1. 09/28/20 4:04 pm  
Kristy Giacomelli-Feys (kristyg):  
Rollback to Initiator
2. 09/30/20 10:55 am  
Hu Yang (huyang):

- Approved for  
RCHEMENG Chair
3. 09/30/20 11:15  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
4. 10/12/20 2:15 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
5. 10/13/20 8:14 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
6. 10/28/20 9:48 am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to  
Initiator
7. 03/09/21 3:53 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
8. 03/09/21 4:12 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
9. 03/17/21 2:51 pm  
Stephen Raper

(sraper):  
Approved for  
Engineering DSCC  
Chair

10. 03/24/21 8:54 am

Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post

11. 04/13/21 10:27  
am

Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda

12. 04/13/21 10:58  
am

Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

### History

1. Jun 24, 2015 by  
luksc (1479.1)

Introduction to the molecular aspects of chemical thermodynamics, transport processes, reaction dynamics, and statistical and quantum mechanics.

### Prerequisites

Chem Eng 3120, admitted to Chem Eng program.

### 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:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**kristyg (09/28/20 4:04 pm):** Rollback: Change in dept chair

**tibbettsmg (10/28/20 9:48 am):** Rollback: resubmit in batch along with any CC requests that prereqs are affected by. MT

Key: 1479

[Preview Bridge](#)



# Course Change Request

Date Submitted: 03/09/21 3:25 pm

Viewing: **CHEM ENG 4091 : Chemical Process Design I**

File: 4285.16

Last approved: 02/04/19 5:02 am

Last edit: 03/09/21 3:37 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 4097 : Chemical Process Design II](#)

Requested **Spring 2022** ~~Fall 2019~~  
Effective Change  
Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 4091

Title  
Chemical Process Design I

## In Workflow

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

## Approval Path

1. 03/09/21 3:31 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
2. 03/09/21 3:38 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

Chem Process Design I

3. 03/18/21 8:14 am  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
4. 03/24/21 8:55 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:27  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:58  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

1. Jan 10, 2017 by Daniel Forciniti (forcinit)
2. Mar 6, 2017 by kristyg (4285.12)
3. Feb 4, 2019 by jcwang (4285.14)

Economic analysis of a chemical process including capital requirements, operating costs, earnings, and profits. The economic balance is applied to chemical engineering operations and processes. Optimization and scheduling techniques are applied to process evaluation. Preliminary process design and use of simulation software.

#### Prerequisites

Chem Eng 3131 and Chem Eng 3141; preceded or accompanied by either Chem Eng 3150 or Chem Eng **5250; preceded or accompanied by either English 3560 or English 1160.** ~~5250.~~

#### Field Trip

#### Statement

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

Total: 3

Required for  
Majors      Yes

Elective for  
Majors      No

Justification for  
change:

1. This is a writing intensive course and English was added to the curriculum to better prepare our students for their design courses.
2. This course is no longer taught with a laboratory component.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer  
Comments

**tibbettsmg (03/09/21 3:37 pm):** updated eff. term to Sp22. MT

Key: 4285

[Preview Bridge](#)

# Course Change Request

A deleted record cannot be edited

## Course Deactivation Proposal

Date Submitted: 03/09/21 3:47 pm

Viewing: **CHEM ENG 4096 : Chemical Engineering Economics**

File: 1083.1

Last edit: 03/09/21 3:47 pm

Changes proposed by: luksc

Requested **Fall 2021** ~~08/14/2018~~

Effective Change

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 4096

Title

Chemical Engineering Economics

Abbreviated Chemical Engr Economics

Course Title

Catalog

Description

### In Workflow

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

### Approval Path

1. 09/28/20 4:04 pm  
Kristy Giacomelli-Feys (kristyg):  
Rollback to Initiator
2. 09/30/20 10:55 am  
Hu Yang (huyang):

- Approved for  
RCHEMENG Chair
3. 09/30/20 11:16  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
4. 10/12/20 2:16 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
5. 10/13/20 8:16 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
6. 10/28/20 9:48 am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to  
Initiator
7. 03/09/21 3:53 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
8. 03/09/21 4:04 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
9. 03/17/21 2:51 pm  
Stephen Raper

(sraper):

Approved for  
Engineering DSCC  
Chair

10. 03/24/21 8:55 am

Marita Tibbetts

(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

11. 04/13/21 10:27

am

Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Meeting Agenda

12. 04/13/21 10:59

am

Stephen Raper

(sraper):

Approved for  
Campus Curricula  
Committee Chair

Economic analysis of a chemical process including capital requirements, operating costs, earnings, and profits. The economic balance is applied to chemical engineering operations and processes. Optimization and scheduling techniques are applied to process evaluation.

#### Prerequisites

Preceded or accompanied by Chem Eng 3130.

#### Field Trip

#### Statement

Credit Hours

LEC: 2

LAB: 0

IND: 0

RSD: 0

Total: 2

Required for Majors	No
Elective for Majors	No

Justification for  
change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**kristyg (09/28/20 4:04 pm):** Rollback: Change in dept chair

**tibbettsmg (10/28/20 9:48 am):** Rollback: resubmit in batch along with any CC  
requests that prereqs are affected by. MT

Key: 1083

[Preview Bridge](#)



# Course Change Request

Date Submitted: 03/09/21 3:25 pm

Viewing: **CHEM ENG 4097 : Chemical Process Design II**

File: 862.20

Last approved: 02/04/19 5:02 am

Last edit: 03/09/21 3:38 pm

Changes proposed by: luksc

Programs  
referencing this  
course

[CH ENG-BS: Chemical Engineering BS](#)

Requested **Spring 2022** ~~Fall 2019~~

Effective Change

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 4097

Title

Chemical Process Design II

Abbreviated Chem Process Design II

Course Title

Catalog  
Description

In Workflow

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

Approval Path

1. 03/09/21 3:31 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
2. 03/09/21 3:38 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

3. 03/18/21 8:14 am  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
4. 03/24/21 8:56 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:27  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:59  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

### History

1. May 4, 2015 by  
luksc (862.1)
2. Mar 6, 2017 by  
forcinit (862.4)
3. Feb 4, 2019 by  
jcwang (862.18)

Engineering principles involved in the design and layout of chemical process equipment. Material and energy balances, equipment selection and design, and preconstruction cost estimation are performed for a capstone design project. Communication emphasized course.

#### Prerequisites

Chem Eng 3150 and Chem Eng 4091; preceded or accompanied by Chem Eng 4110.

#### Field Trip

#### Statement

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

Total: 3

Required for  
Majors      Yes

Elective for  
Majors      No

Justification for  
change:

This course is no longer taught with a laboratory component

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

#### Course Reviewer

#### Comments

**tibbettsmg (03/09/21 3:38 pm):** updated eff. term to Sp22. MT

Key: 862

[Preview Bridge](#)

# Course Change Request

A deleted record cannot be edited

## Course Deactivation Proposal

Date Submitted: 03/09/21 3:48 pm

Viewing: **CHEM ENG 4100 : Chemical Engineering Laboratory I**

File: 1394.1

Last edit: 03/09/21 4:10 pm

Changes proposed by: luksc

Other Courses  
referencing this  
course

In The Prerequisites:

[CHEM ENG 4110 : Chemical Engineering Process Dynamics And Control](#)

Requested **Spring 2022 08/14/2018**

Effective Change  
Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 4100

Title  
Chemical Engineering Laboratory I

Abbreviated Chemical Engr Lab I  
Course Title

### In Workflow

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

### Approval Path

1. 09/28/20 4:04 pm  
Kristy Giacomelli-Feys (kristyg):  
Rollback to Initiator
2. 09/30/20 10:55 am  
Hu Yang (huyang):

## Catalog Description

- Approved for  
RCHEMENG Chair
3. 09/30/20 11:17  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
4. 10/12/20 2:16 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
5. 10/13/20 8:17 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
6. 10/28/20 9:49 am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to  
Initiator
7. 03/09/21 3:53 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
8. 03/09/21 4:10 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
9. 03/17/21 2:51 pm  
Stephen Raper

(sraper):

Approved for  
Engineering DSCC  
Chair

10. 03/24/21 8:56 am

Marita Tibbetts

(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

11. 04/13/21 10:27

am

Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Meeting Agenda

12. 04/13/21 11:01

am

Stephen Raper

(sraper):

Approved for  
Campus Curricula  
Committee Chair

Experiments associated with unit operations involving fluid flow and heat transfer. Principles of data and uncertainty analysis are introduced with emphasis on model building. Communication skills are stressed. This is a communication emphasized course.

#### Prerequisites

Chem Eng 3100 and Chem Eng 3110.

#### Field Trip

#### Statement

Credit Hours

LEC: 1

LAB: 1

IND: 0

RSD: 0

Total: 2

Required for Majors	No
Elective for Majors	No

Justification for  
change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**kristyg (09/28/20 4:04 pm):** Rollback: Change in dept chair

**tibbettsmg (10/28/20 9:49 am):** Rollback: resubmit in batch along with any CC requests that prereqs are affected by. MT

**tibbettsmg (03/09/21 4:10 pm):** ChE4110 proposed for Sp22. changed eff date for 4100 to match. MT

Key: 1394

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/09/21 3:30 pm

Viewing: **CHEM ENG 4110 : Chemical Engineering Process Dynamics And Control**

File: 2072.8

Last approved: 05/24/16 4:57 am

Last edit: 04/13/21 10:28 am

Changes proposed by: luksc

Programs  
referencing this  
course

[CH ENG-BS: Chemical Engineering BS](#)

[AUTOENG-MI: Minor in Automation Engineering](#)

[AUTOEN-CTU: Undergraduate Certificate in Automation Engineering](#)

[SPACE R-CT: Space Resources Certificate](#)

Other Courses  
referencing this  
course

In The Prerequisites:

[CHEM ENG 4097 : Chemical Process Design II](#)

[CHEM ENG 4120 : Process Dynamics And Control Laboratory](#)

[CHEM ENG 5190 : Plantwide Process Control](#)

[CHEM ENG 5355 : Process Control System Safety, Security and Alarms](#)

[ELEC ENG 5350 : Plantwide Process Control](#)

[ELEC ENG 5355 : Process Control System Safety, Security and Alarms](#)

In Workflow

1. **RCHEMENG Chair**

2. **CCC Secretary**

3. **Engineering DSCC Chair**

4. **Pending CCC Agenda post**

5. **CCC Meeting Agenda**

6. **Campus Curricula Committee Chair**

7. **FS Meeting Agenda**

8. **Faculty Senate Chair**

9. **Registrar**

10. **CAT entry**

11. **Peoplesoft**

Approval Path

1. 03/09/21 3:32 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair

2. 03/09/21 3:40 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary



Requested **Spring 2022** ~~08/14/2018~~  
Effective Change  
Date  
Department Chemical and Biochemical Engineering  
Discipline Chemical Engineering (CHEM ENG)  
Course Number 4110  
Title  
Chemical Engineering Process Dynamics And Control  
Abbreviated Process Control  
Course Title

Catalog  
Description

Study of the dynamics of chemical processes and the instruments and software used to measure and control temperature, pressure, liquid level, flow, and composition.  
Generally offered fall semester only.

Prerequisites

3. 03/18/21 8:14 am  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
4. 03/24/21 8:57 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:28  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 11:01  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

History

1. May 24, 2016 by  
forcinit (2072.1)

~~Preceded or accompanied by any one of Chem Eng 4100 or Chem Eng 4130 or Chem Eng 4200; or preceded by Chem Eng 3150, Chem Eng 3131 and Chem Eng 3141; or preceded by Chem Eng 3150 and preceded or accompanied by Chem Eng 5250.~~

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:

Removed prerequisites from previous version of curriculum (pre 2016)

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer  
Comments

**tibbettsmg (03/09/21 3:39 pm):** updated eff. term to Sp22. MT

Key: 2072

[Preview Bridge](#)

# Course Change Request

A deleted record cannot be edited

## Course Deactivation Proposal

Date Submitted: 03/09/21 3:48 pm

Viewing: **CHEM ENG 4120 : Process Dynamics  
And Control Laboratory**

File: 383.1

Last edit: 03/09/21 3:48 pm

Changes proposed by: luksc

Requested	Fall 2021 <del>08/14/2018</del>
Effective Change Date	
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4120
Title	Process Dynamics And Control Laboratory
Abbreviated Course Title	Process Control Lab

Catalog Description

In Workflow

1. RCHEMENG Chair

2. CCC Secretary

3. Engineering DSCC Chair

4. Pending CCC Agenda post

5. CCC Meeting Agenda

6. Campus Curricula Committee Chair

7. FS Meeting Agenda

8. Faculty Senate Chair

9. Registrar

10. CAT entry

11. Peoplesoft

Approval Path

1. 09/28/20 4:04 pm  
Kristy Giacomelli-Feys (kristyg):  
Rollback to Initiator

2. 09/30/20 10:55 am  
Hu Yang (huyang):

- Approved for  
RCHEMENG Chair
3. 09/30/20 11:17  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
4. 10/12/20 2:16 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
5. 10/13/20 8:18 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
6. 10/28/20 9:49 am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to  
Initiator
7. 03/09/21 3:53 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
8. 03/09/21 4:13 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
9. 03/17/21 2:51 pm  
Stephen Raper

(sraper):

Approved for  
Engineering DSCC  
Chair

10. 03/24/21 8:57 am

Marita Tibbetts

(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

11. 04/13/21 10:29

am

Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Meeting Agenda

12. 04/13/21 11:00

am

Stephen Raper

(sraper):

Approved for  
Campus Curricula  
Committee Chair

Application of concepts of industrial process dynamics and control using  
experiments that demonstrate different control and sensing devices and software.

This is a communications emphasized course.

#### Prerequisites

Preceded or accompanied by Chem Eng 4110.

#### Field Trip

#### Statement

Credit Hours

LEC: 0

LAB: 1

IND: 0

RSD: 0

Total: 1

Required for Majors	No
Elective for Majors	No

Justification for  
change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**kristyg (09/28/20 4:04 pm):** Rollback: Change in dept chair

**tibbettsmg (10/28/20 9:49 am):** Rollback: resubmit in batch along with any CC requests that prereqs are affected by. MT

Key: 383

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/09/21 3:32 pm

Viewing: **CHEM ENG 4130 : Chemical Engineering Laboratory II**

File: 792.10

Last approved: 07/27/20 6:01 am

Last edit: 03/09/21 3:41 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 4110 : Chemical Engineering Process Dynamics And Control](#)

Requested  
Effective Change  
Date

**Spring 2022** ~~Fall 2020~~

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 4130

Title  
Chemical Engineering Laboratory II

In Workflow

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

Approval Path

1. 03/09/21 3:34 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
2. 03/09/21 3:41 pm  
Marita Tibbetts (tibbettsmg):  
Approved for CCC  
Secretary

Abbreviated  
Course Title

Chem Eng Lab II

Catalog  
Description

3. 03/18/21 8:14 am  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
4. 03/24/21 8:58 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:29  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:59  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

### History

1. May 24, 2016 by  
forcinit (792.1)
2. Jul 27, 2020 by  
ershenb (792.7)

Experiments illustrating the unit operations of continuous and staged separation.  
Experimental design methods are extended to include the principles of regression



and model building. Communication skills are stressed. This is a communication emphasized course.

#### Prerequisites

Stat 3113, Chem Eng 3141 and Chem Eng 3131; preceded or accompanied by Chem Eng **3150 and either English 3560 or English 1160.** ~~3150-~~

#### Field Trip

#### Statement

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

Justification for change:

Modification reflects current curriculum

Semesters previously offered as an experimental course

Co-Listed Courses:

#### Course Reviewer

#### Comments

**tibbettsmg (03/09/21 3:41 pm):** updated eff. term to Sp22. MT

Key: 792

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/17/21 11:13 am

Viewing: **CHEM ENG 4220 : Biochemical Reactor Laboratory**

File: 797.13

Last approved: 08/01/20 6:01 am

Last edit: 04/13/21 10:29 am

Changes proposed by: luksc

Programs  
referencing this  
course

[CH ENG-BS: Chemical Engineering BS](#)

Requested **Spring 2022** ~~Fall 2020~~

Effective Change

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 4220

Title

Biochemical Reactor Laboratory

Abbreviated Bioreactor Laboratory

Course Title

Catalog  
Description

In Workflow

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

Approval Path

1. 03/17/21 11:14 am  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
2. 03/17/21 11:28 am  
Marita Tibbetts  
(tibbettsmg):

Approved for CCC  
Secretary

3. 03/18/21 8:14 am

Stephen Raper  
(sraper):

Approved for  
Engineering DSCC  
Chair

4. 03/24/21 8:58 am

Marita Tibbetts  
(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:29

am

Marita Tibbetts  
(tibbettsmg):

Approved for CCC  
Meeting Agenda

6. 04/13/21 10:59

am

Stephen Raper  
(sraper):

Approved for  
Campus Curricula  
Committee Chair

## History

1. Oct 21, 2016 by

forcinit (797.1)

2. Aug 1, 2020 by

jcwang (797.10)

Introduction to the unit operations involved with the production of biochemicals. The experiments emphasize the isolation of proteins and enzymes from tissue and bacteria cells. This is a communications emphasized course.

#### Prerequisites

Stat 3113; Preceded or accompanied by Chem Eng ~~5250~~ and ~~Chem Eng~~ 4210.

#### Field Trip

#### Statement

Credit Hours

LEC: 1

LAB: 2

IND: 0

RSD: 0

Total: 3

Required for

**No** ~~Yes~~

Majors

Elective for

**Yes** ~~No~~

Majors

#### Justification for

change:

modified the way this is taught to allow students to take these courses in either order

#### Semesters

previously

offered as an

experimental

course

#### Co-Listed

Courses:

Course Reviewer

Comments

Key: 797

[Preview Bridge](#)

# Course Change Request

A deleted record cannot be edited

## Course Deactivation Proposal

Date Submitted: 03/09/21 3:48 pm

Viewing: **CHEM ENG 4230 : Bioprocess Safety**

File: 4252.5

Last approved: 05/24/16 4:57 am

Last edit: 03/09/21 3:58 pm

Changes proposed by: luksc

Requested **Fall 2021** ~~08/14/2018~~

Effective Change  
Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 4230

Title  
Bioprocess Safety

Abbreviated Bioprocess Safety  
Course Title

Catalog  
Description

### In Workflow

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

### Approval Path

- 1. 03/09/21 3:53 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
- 2. 03/09/21 3:59 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

3. 03/17/21 2:51 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
4. 03/24/21 8:58 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:29  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:59  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

### History

1. May 24, 2016 by  
marlene

This course covers a risk assessment, biohazard containment and inactivation practices, and other biosafety issues relevant to industrial bioprocessing. Considerations relating to the release of genetically modified organisms are also discussed.

### Prerequisites

Preceded or accompanied by Chem Eng 4210.

Field Trip  
Statement

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

Justification for  
change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer  
Comments

Key: 4252

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/09/21 3:35 pm

Viewing: **CHEM ENG 5220 : Intermediate Engineering Thermodynamics**

File: 4310.4

Last approved: 10/21/16 2:23 pm

Last edit: 04/13/21 10:30 am

Changes proposed by: luksc

Programs  
referencing this  
course

[CH ENG-MS: Chemical Engineering MS](#)

[CHEMPRO-CT: Chemical Process Engineering CT](#)

Requested **Spring 2022 ~~08/14/2018~~**

Effective Change  
Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 5220

Title  
Intermediate Engineering Thermodynamics

Abbreviated Intermediate Thermo  
Course Title

Catalog  
Description

In Workflow

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

Approval Path

1. 03/09/21 3:37 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
2. 03/09/21 3:43 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary



3. 03/18/21 8:14 am  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
4. 03/24/21 9:00 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:30  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:59  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

### History

1. Oct 21, 2016 by  
Daniel Forciniti  
(forcinit)

Review thermodynamic principles for pure fluids and mixtures. Emphasis on applications for the chemical industry and use of fundamental relations and equations of state.

### Prerequisites

**Chem Eng 3120** ~~Senior~~ or graduate standing.

Field Trip  
Statement

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

Total: 3

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

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

Justification for  
change:

Better reflects true requirements. Some students came in with enough transfer credit and tried to take this course before they had Thermo I, but they had senior standing

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer  
Comments

**tibbettsmg (03/09/21 3:42 pm):** updated eff. term to Sp22. MT

**sraper (03/17/21 2:38 pm):** this is likely an elective for majors. It is not in the old or new curriculum

Key: 4310

[Preview Bridge](#)

# Course Change Request

Date Submitted: 02/16/21 9:03 am

Viewing: **CHEM ENG 5305 : Hazardous Materials Management**

File: 2048.2

Last approved: 07/27/20 6:01 am

Last edit: 02/16/21 10:27 am

Changes proposed by: luksc

Programs  
referencing this  
course

[CHEMPRO-CT: Chemical Process Engineering CT](#)

Requested **Spring 2022** ~~Fall 2020~~

Effective Change

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 5305

Title

Hazardous Materials Management

Abbreviated Hazardous Materials Mgt

Course Title

Catalog  
Description

In Workflow

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

Approval Path

1. 02/16/21 9:20 am  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
2. 02/16/21 10:27  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

3. 02/26/21 8:46 am  
Stephen Raper  
(srafer):  
Approved for  
Engineering DSCC  
Chair
4. 03/24/21 9:01 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:30  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:59  
am  
Stephen Raper  
(srafer):  
Approved for  
Campus Curricula  
Committee Chair

### History

1. Jul 27, 2020 by  
luksc (2048.1)

Major themes: hazard identification and characterization; safety, health and environmental management; and the protection of safety, health and environment. Students will have an understanding of work place and environmental hazards in order to be able to facilitate their management and control. The course will include an intensive 30 hour hands-on workshop

## Prerequisites

Chem Eng 3131 or graduate standing.

## Field Trip

## Statement

Credit Hours

LEC: **3** ~~0~~LAB: **0** ~~1~~

IND: 0

RSD: 0

Total: **3** ~~1~~

Required for

No

Majors

Elective for

Yes

Majors

Justification for  
change:

The instructors (Dr. Ludlow with the assistance of two industry volunteers) taught it in Fa20 as a 1-credit lab, but decided that did not work as well as hoped and wish to return this to a 3-credit course.

Semesters

previously

offered as an

experimental

course

Last taught as a 3-credit course in 2010

Co-Listed

Courses:

Course Reviewer

Comments

**tibbettsmg (02/16/21 10:27 am):** effective date changed to SP22. MT

Key: 2048

[Preview Bridge](#)

# Course Change Request

Date Submitted: 02/25/21 9:23 am

Viewing: **COMP ENG 4096 : Computer Engineering Senior Project I**

File: 1392.7

Last approved: 05/24/16 4:58 am

Last edit: 02/26/21 7:32 am

Changes proposed by: stanleyj

Programs  
referencing this  
course

[CP ENG-BS: Computer Engineering BS](#)

[EL ENG-BS: Electrical Engineering BS](#)

Other Courses  
referencing this  
course

In The Catalog Description:

[COMP ENG 4097 : Computer Engineering Senior Project II](#)

In The Prerequisites:

[COMP ENG 4097 : Computer Engineering Senior Project II](#)

Requested **Spring 2022** ~~08/14/2018~~  
Effective Change  
Date

Department Electrical and Computer Engineering

Discipline Computer Engineering (COMP ENG)

Course Number 4096

## In Workflow

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

## Approval Path

1. 02/25/21 5:17 pm  
Watkins  
(watkins):  
Approved for  
RELECENG Chair
2. 02/26/21 7:32 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

Title		3. 03/04/21 1:23 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair
Computer Engineering Senior Project I		
Abbreviated Course Title	Cp Eng Senior Project I	
Catalog Description		4. 03/24/21 9:01 am Marita Tibbetts (tibbettsmg): Approved for Pending CCC Agenda post
		5. 04/13/21 10:30 am Marita Tibbetts (tibbettsmg): Approved for CCC Meeting Agenda
		6. 04/13/21 10:59 am Stephen Raper (sraper): Approved for Campus Curricula Committee Chair
		History
		1. Apr 28, 2014 by lahne (1392.1)
		2. Apr 1, 2015 by kleb6b (1392.2)
		3. May 24, 2016 by stanleyj (1392.3)

A complete design cycle. Working in small teams, students will design, document, analyze, implement, and test a product. Topics include: Iteration in design, prototyping, group dynamics, design reviews, making effective presentations, concurrent design, designing for test, ethics and standards, testing and evaluation.

#### Prerequisites

Comp Eng ~~2210, either Econ 1100 or Econ 1200, either English 3560 or English 1160,~~  
~~Comp Eng 3150, Comp Eng 3151, Comp Eng 3110, and Elec Eng 2200.~~  
**Preceded or accompanied by**  
**either English 3560 or English 1160, Elec Eng 2200, and Comp Sci 1575.**

#### Field Trip

#### Statement

Credit Hours	LEC: 0	LAB: .5	IND: 0	RSD: .5
Total: 1				
Required for Majors	Yes			
Elective for Majors	No			

Justification for  
change:

#### Current prerequisites

Comp Eng 2210, either Econ 1100 or Econ 1200, either English 3560 or English 1160, Comp Eng 3150, Comp Eng 3151, Comp Eng 3110, and Elec Eng 2200

The prerequisites have been updated to better reflect needed student backgrounds for beginning and undertaking their capstone projects. The prerequisite changes eliminate: Comp Eng 2210, which is a prerequisite for Comp Eng 3150. In order to enhance student progression through the Comp Eng BS program and provide the necessary hardware and software technical background to engage their capstone projects, technical writing, electronic devices, and data structures have been adjusted/added to pre-/co-requisite courses.

Semesters  
previously



offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**tibbettsmg (02/26/21 7:32 am):** deadline has passed for affecting changes for FS21.  
Updated effective date to Spring 22. MT

Key: 1392

[Preview Bridge](#)

# Course Change Request

## New Course Proposal

Date Submitted: 03/08/21 7:47 am

Viewing: **COMP SCI 6407 : Internet of Things with Data Science**

File: 4752

Last edit: 03/08/21 7:47 am

Changes proposed by: zhupe

Requested Fall 2021

Effective Change

Date

Department Computer Science

Discipline Computer Science (COMP SCI)

Course Number 6407

Title

Internet of Things with Data Science

Abbreviated IoT with Data Science

Course Title

Catalog

Description

### In Workflow

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

### Approval Path

1. 12/24/20 12:08 pm  
Samuel Frimpong (frimpong):  
Approved for RCOMPSCI Chair
2. 01/04/21 2:35 pm  
Marita Tibbetts (tibbettsmg):

Rollback to  
Initiator

3. 03/08/21 7:58 am  
Samuel Frimpong  
(frimpong):  
Approved for  
RCOMPSCI Chair
4. 03/08/21 10:09  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
5. 03/18/21 8:14 am  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
6. 03/24/21 9:02 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
7. 04/13/21 10:31  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
8. 04/13/21 10:59  
am  
Stephen Raper  
(sraper):  
Approved for

This course provides both theoretical and practical treatments. Part 1. IoT wireless technologies, IoT security, IoT development kit. Part 2. Python programming, data analysis with Pandas, visualization with Matplotlib, machine learning with Scikit-learn. Deep learning (optional). Part 3. Advanced Topics in IoT-DS (Research oriented; flipped classroom).

#### Prerequisites

Graduate standing with reasonable educational background in computer networks, data mining or machine learning, probability and statistics, and programming languages. Recommended for PhD and thesis-based MS students.

#### Field Trip Statement

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

#### Justification for new course:

Course has successfully run for two consecutive semesters. Topics of the course are important and timely, backed up by the increasingly high demand from both industry and academia for IoT professionals and Data Scientists.

#### Semesters previously offered as an experimental course

The course is offered in FS2020 and SP2021 as an experimental course.  
FS2020 (enrollment: 11), SP2021 (enrollment: 29)

Co-Listed

Courses:

Course Reviewer

Comments

**tibbettsmg (01/04/21 2:35 pm):** Rollback: This course has not been successfully taught twice. You will need to resubmit after it has actually been taught successfully in Spring 21. MT

Key: 4752

[Preview Bridge](#)

# Course Change Request

## New Course Proposal

Date Submitted: 03/11/21 1:53 pm

Viewing: **EDUC 3298 : Teacher Field Experience III**

File: 4797

Last edit: 03/11/21 2:11 pm

Changes proposed by: bakm75

Programs  
referencing this  
course

[PHYSIC-BS: Physics BS](#)

[AP MATH-BS: Applied Mathematics BS](#)

[BIO SC-BA: Biological Sciences BA](#)

[HIST-BA: History BA](#)

[PROPOSED: Education](#)

Requested Fall 2021

Effective Change  
Date

Department Teacher Education and Certification

Discipline Education (EDUC)

Course Number 3298

Title  
Teacher Field Experience III

Abbreviated Tchr Field III  
Course Title

### In Workflow

1. **REDUCATION**  
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. 03/11/21 1:55 pm  
Beth Kania-Gosche  
(bkaniagosche):  
Approved for  
REDUCATION  
Chair
2. 03/11/21 2:11 pm  
Marita Tibbetts

## Catalog Description

- (tibbettsmg):  
Approved for CCC  
Secretary
3. 03/11/21 3:37 pm  
Cecil Eng Huang  
Chua (cchua):  
Approved for  
Social Sciences  
DSCC Chair
4. 03/24/21 9:03 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:31  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:59  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

Students enrolled in this course will be planning and implementing activities and assessments with children or adolescents in structured learning environments. Students must be supervised by experienced, credentialed educators and request placement through the department. At least 30 hours of contact time is required per credit hour.

## Prerequisites

EDUC 1104 and 1164.

## Field Trip

## Statement

Students will be in area school districts for at least 30 hours.

Credit Hours

LEC: 0

LAB: 1

IND: 0

RSD: 0

Total: 1

Required for

Yes

Majors

Elective for

No

Majors

## Justification for

## new course:

EDUC 1104 was lowered to one credit hour and 30 contact hours with K-12 students.

This course is the remaining credit hour and contact time, so that the degree and field experiences remain at the same level, just at a different point in the program.

This course is at the 300 level with the intention that students will take it the semester or year prior to student teaching. A field experience closer to the final student teaching semester will help students be more effective. Feedback from students indicated that they needed more sustained time in a school before student teaching.

## Semesters

## previously

## offered as an

## experimental

## course

This was submitted and approved as an experimental course, but because of Covid, we have not yet offered it. I was told need to submit this as a permanent course since it will be required.

It is not a DESE requirement; this field experience is above the DESE minimum criteria.

## Co-Listed

## Courses:



Course Reviewer

Comments

**tibbettsmg (03/11/21 2:11 pm):** This is a required course for the History-BA  
Secondary Education Emphasis. MT

Key: 4797

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/05/21 8:15 am

Viewing: **EDUC 3340 : Assessment of Student Learning**

File: 1839.8

Last approved: 03/04/21 6:01 am

Last edit: 03/05/21 9:42 am

Changes proposed by: bakm75

Programs  
referencing this  
course

[PHYSIC-BS: Physics BS](#)

[AP MATH-BS: Applied Mathematics BS](#)

[BIO SC-BA: Biological Sciences BA](#)

[HIST-BA: History BA](#)

[PROPOSED: Education](#)

[PROPOSED: Teaching and Learning Undergraduate Certificate](#)

Other Courses  
referencing this  
course

In The Prerequisites:

[EDUC 3280 : Instructional Strategies in the Content Area](#)

Requested

Spring **2022** ~~2021~~

Effective Change  
Date

Department

Teacher Education and Certification

## In Workflow

1. **REDUCATION 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. 03/04/21 11:06 am  
Marita Tibbetts (tibbettsmg):  
Rollback to Initiator
2. 03/05/21 6:42 am  
Marita Tibbetts (tibbettsmg):

4/13/2021		EDUC 3340: Assessment of Student Learning	
Discipline	Education (EDUC)	Rollback to Initiator	
Course Number	3340	3. 03/05/21 8:15 am	
Title	Assessment of Student Learning	Beth Kania-Gosche (bkaniagosche): Approved for REDUCATION Chair	
Abbreviated Course Title	Assessment of Learning	4. 03/05/21 9:42 am	
Catalog Description		Marita Tibbetts (tibbettsmg): Approved for CCC Secretary	
		5. 03/05/21 9:44 am	
		Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair	
		6. 03/24/21 9:04 am	
		Marita Tibbetts (tibbettsmg): Approved for Pending CCC Agenda post	
		7. 04/13/21 10:31 am	
		Marita Tibbetts (tibbettsmg): Approved for CCC Meeting Agenda	
		8. 04/13/21 10:59 am	
		Stephen Raper (sraper):	

Approved for  
Campus Curricula  
Committee Chair

### History

1. Feb 4, 2019 by  
carterke (1839.1)
2. Nov 25, 2019 by  
bakm75 (1839.5)
3. Mar 4, 2021 by  
tibbettsmg  
(1839.6)

Students will learn to evaluate assessments for validity and reliability. Students will develop formative and summative assessments aligned with learning outcomes. Writing quality rubrics and universal design will be introduced. Students will analyze data to make instructional decisions and learn to evaluate vendor assessments.

### Prerequisites

Educ 1040.

### 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:

administratively correcting co-list approved by CCC effective Sp21.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed

Courses:

**PSYCH 4340 - Assessment of Student Learning**

Course Reviewer

Comments

**tibbettsmg (03/04/21 11:06 am):** Rollback: rollback submitted by mistake

**tibbettsmg (03/05/21 6:42 am):** Rollback: rollback so Educ can submit Psych 3340  
co-list change to proposed renumbering of Psych 4340.

Key: 1839

[Preview Bridge](#)

# Course Change Request

Date Submitted: 02/25/21 4:09 pm

Viewing: **ELEC ENG 4096 : Electrical Engineering Senior Project I**

File: 2214.13

Last approved: 02/25/19 4:54 am

Last edit: 02/26/21 7:34 am

Changes proposed by: kte

Programs  
referencing this  
course

[CP ENG-BS: Computer Engineering BS](#)

[EL ENG-BS: Electrical Engineering BS](#)

[EL ENG-MI: Minor in Electrical Engineering](#)

Other Courses  
referencing this  
course

In The Prerequisites:

[ELEC ENG 4097 : Electrical Engineering Senior Project II](#)

Requested  
Effective Change  
Date

**Spring 2022** ~~Fall 2019~~

Department Electrical and Computer Engineering

Discipline Electrical Engineering (ELEC ENG)

Course Number 4096

Title

In Workflow

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

Approval Path

1. 02/25/21 5:17 pm  
Watkins  
(watkins):  
Approved for  
RELECENG Chair
2. 02/26/21 7:34 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

Electrical Engineering Senior Project I		3. 03/04/21 1:23 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair 4. 03/24/21 9:05 am Marita Tibbetts (tibbettsmg): Approved for Pending CCC Agenda post 5. 04/13/21 10:31 am Marita Tibbetts (tibbettsmg): Approved for CCC Meeting Agenda 6. 04/13/21 10:59 am Stephen Raper (sraper): Approved for Campus Curricula Committee Chair
Abbreviated Course Title	EE Senior Project I	
Catalog Description		History 1. Apr 28, 2014 by lahne (2214.1) 2. Oct 20, 2014 by lahne (2214.2) 3. Jun 29, 2018 by sweetk (2214.3) 4. Feb 25, 2019 by ferdowsi

A complete design cycle. Working in small teams, students will design, document, analyze, implement and test a product. Topics include: Iteration in design, prototyping, group dynamics, design reviews, making effective presentations, concurrent design, designing for test, ethics and standards, testing and evaluation.

#### Prerequisites

Comp Eng 2210, ~~Econ 1100 or Econ 1200, English 3560 or English 1160~~, and at least three of the following: Elec Eng 3500 or Elec Eng 3540; Elec Eng 3320, Elec Eng 3430, Elec Eng 3600 or Elec Eng **3100 (may be preceded or accompanied by one of the previous courses)**. ~~3100~~. **Preceded or accompanied by English 3560 or English 1160,**

#### Field Trip

#### Statement

Credit Hours	LEC: 0	LAB: .5	IND: 0	RSD: .5
--------------	--------	---------	--------	---------

Total: 1

Required for Majors	Yes
------------------------	-----

Elective for Majors	No
------------------------	----

Justification for  
change:

The prerequisite change eliminates economics which is generally taken in the Freshman year. The technical writing background is not needed until the follow-on Elec Eng 4097 course. Allow an additional one of the required Junior-level core courses to be a co-requisite as they will still have completed all of the Junior-level core courses before enrolling in the follow-on Elec Eng 4097 course.

Semesters  
previously  
offered as an  
experimental  
course



Co-Listed

Courses:

Course Reviewer

Comments

**tibbettsmg (02/26/21 7:34 am):** deadline has past for affecting changes for FS21.

Updated effective date to Spring 22. MT

Key: 2214

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/05/21 11:36 am

Viewing: **ELEC ENG 5820 5370 : Introduction to Neural Networks and Applications**

File: 1840.1

Last edit: 03/05/21 11:36 am

Changes proposed by: kte

Requested	Spring 2022 08/14/2018
Effective Change	
Date	
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	5820 5370
Title	Introduction to Neural Networks and Applications
Abbreviated	Intro to Neurl Netwk&App
Course Title	

Catalog	
Description	

- In Workflow
1. RELECENG Chair

2. CCC Secretary

3. Engineering DSCC Chair

4. Pending CCC Agenda post

5. CCC Meeting Agenda

6. Campus Curricula Committee Chair

7. FS Meeting Agenda

8. Faculty Senate Chair

9. Registrar

10. CAT entry

11. Peoplesoft

- Approval Path
1. 03/05/21 11:34 am  
Marita Tibbetts (tibbettsmg):  
Rollback to Initiator

2. 03/12/21 1:15 pm  
Watkins (watkins):

Approved for  
RELECENG Chair

3. 03/12/21 1:16 pm

Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Secretary

4. 03/18/21 8:14 am

Stephen Raper

(sraper):

Approved for  
Engineering DSCC  
Chair

5. 03/24/21 9:06 am

Marita Tibbetts

(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

6. 04/13/21 10:31  
am

Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Meeting Agenda

7. 04/13/21 11:00  
am

Stephen Raper

(sraper):

Approved for  
Campus Curricula  
Committee Chair

The course provides an introduction to basic neural network architectures and their applications. Students learn to construct neural networks and train them to solve engineering problems, specifically pattern recognition and function approximation.

Mathematical analysis of network architectures, training algorithms and practical applications of neural nets.

#### Prerequisites

Graduate Standing.

#### Field Trip

#### Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Required for

No

Majors

Elective for

Yes ~~No~~

Majors

Justification for  
change:

Changing Elec Eng course co-list number. The second digit classifies this course as a control systems course in Elec Eng, which it is not. The second digit of 8 is a general classification.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed

Courses:

SYS ENG 5212 - Introduction to Neural Networks and Applications

Course Reviewer

Comments

**tibbettsmg (03/05/21 11:34 am):** Rollback: rollback for additional changes. MT



# Course Change Request

## New Course Proposal

Date Submitted: 03/02/21 4:42 pm

Viewing: **GEOPHYS 6221 : Advanced Geophysical Data Analysis**

File: 4796

Last edit: 03/03/21 8:33 am

Changes proposed by: liukh

Requested Summer 2021

Effective Change

Date

Department Geosciences and Geological and Petroleum Engineering

Discipline Geophysics (GEOPHYS)

Course Number 6221

Title

Advanced Geophysical Data Analysis

Abbreviated Adv Geophys Data Analys

Course Title

Catalog

Description

### In Workflow

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

### Approval Path

1. 03/03/21 8:28 am  
David Borrok (borrokd):  
Approved for RGEOENG Chair
2. 03/03/21 8:34 am  
Marita Tibbetts (tibbettsmg):  
Approved for CCC Secretary

3. 03/17/21 1:56 pm  
Katie Shannon  
(shannonk):  
Approved for  
Sciences DSCC  
Chair
4. 03/24/21 9:06 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:31  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:59  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

Applications of advanced time series and spatial series analysis techniques to geophysical data. Topics covered include digitization and aliasing of geophysical signals, frequency and wavenumber spectra, digital filtering and linear systems theory. Hands-on data processing exercises will provide theoretical knowledge as applied to geophysical investigations.

#### Prerequisites

Comp Sci 1970 and Comp Sci 1980 or equivalents.

#### 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  
new course:

The course has been successfully offered twice as an experimental course over the past two years.

Semesters  
previously  
offered as an  
experimental  
course

Summer, 2019 and Summer, 2020

Co-Listed  
Courses:

Course Reviewer  
Comments

**tibbettsmg (03/03/21 8:33 am):** Enrollment was 7 in SS20, 21 in SS19. MT

Key: 4796

[Preview Bridge](#)



# Course Change Request

Date Submitted: 02/23/21 5:43 pm

Viewing: **IS&T 4257 : Global Digital Network Economy**

File: 2030.1

Last edit: 04/13/21 10:31 am

Changes proposed by: cecq8z

Programs  
referencing this  
course

BUS&MS-BS: Business and Mgmt Systems BS

Other Courses  
referencing this  
course

In The Catalog Description:

ECON 4130 : Network Economy

## 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

Requested	Spring 2022 08/14/2018
Effective Change	
Date	
Department	Business and Information Technology
Discipline	Info Science & Technology (IS&T)
Course Number	4257
Title	Global Digital Network Economy
Abbreviated	Global Digital Network
Course Title	Economy

## Approval Path

- 1. 02/24/21 1:05 am  
siauk: Approved  
for RINFSCTE  
Chair
- 2. 02/26/21 9:13 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

## Catalog Description

3. 02/26/21 11:56 am  
Cecil Eng Huang  
Chua (cchua):  
Approved for  
Social Sciences  
DSCC Chair
4. 03/24/21 9:08 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:32 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:59 am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

Emerging Network/Internet economy, using traditional economic tools. Topics: production and reproduction cost of information, information as an "experience good," versions of products, switching cost, lock-in effects, market adoption dynamics, first-mover advantage, intellectual property rights.

## Prerequisites

Econ 1100 or Econ 1200.

## Field Trip

## Statement

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

Justification for  
change:

Person now teaching this course is not an economist. Claiming it is an economics course would affect our accreditation. Name change to avoid confusing this with the Economics course.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

~~ECON 4130 - Network Economy~~

Course Reviewer

Comments

**tibbettsmg (02/26/21 9:13 am):** deadline past for affecting changes for FS 21.  
Effective date updated to Sp22. MT

Key: 2030

[Preview Bridge](#)

# Course Change Request

Date Submitted: 02/15/21 3:02 pm

Viewing: **MECH ENG 2519 : Thermodynamics**

File: 765.5

Last approved: 10/07/17 3:29 am

Last edit: 02/15/21 3:16 pm

Changes proposed by: nisbett

## Programs

referencing this  
course

[NU ENG-BS: Nuclear Engineering BS](#)  
[AE ENG-BS: Aerospace Engineering BS](#)  
[AP MATH-BS: Applied Mathematics BS](#)  
[CP ENG-BS: Computer Engineering BS](#)  
[EL ENG-BS: Electrical Engineering BS](#)  
[MC ENG-BS: Mechanical Engineering BS](#)

## Other Courses

referencing this  
course

In The Prerequisites:

[AERO ENG 3171 : Aerodynamics II](#)  
[AERO ENG 5519 : Advanced Thermodynamics](#)  
[AERO ENG 5539 : Modeling Across Scales in Computational Mechanics](#)  
[MECH ENG 3131 : Thermofluid Mechanics I](#)  
[MECH ENG 3521 : Applied Thermodynamics](#)  
[MECH ENG 3525 : Heat Transfer](#)  
[MECH ENG 4840 : Mechanical Instrumentation](#)  
[MECH ENG 5519 : Advanced Thermodynamics](#)  
[MECH ENG 5539 : Modeling Across Scales in Computational](#)

## In Workflow

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

## Approval Path

1. 02/15/21 1:27 pm  
Marita Tibbetts (tibbettsmg):  
Rollback to Initiator
2. 02/15/21 3:10 pm  
David Bayless (djbkqf):  
Approved for RMECHENG Chair

MechanicsNUC ENG 3221 : Reactor Fluid MechanicsRequested **Fall 2021** ~~01/08/2018~~

Effective Change

Date

Department Mechanical &amp; Aerospace Engineering

Discipline Mechanical Engineering (MECH ENG)

Course Number 2519

Title

Thermodynamics

Abbreviated Thermodynamics

Course Title

Catalog

Description

3. 02/15/21 3:16 pm

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Secretary

4. 02/26/21 8:46 am

Stephen Raper

(sraper):

Approved for

Engineering DSCC

Chair

5. 03/24/21 9:09 am

Marita Tibbetts

(tibbettsmg):

Approved for

Pending CCC

Agenda post

6. 04/13/21 10:32

am

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Meeting Agenda

7. 04/13/21 11:00

am

Stephen Raper

(sraper):

Approved for

Campus Curricula

Committee Chair

## History

1. Oct 19, 2015 by

nisbett (765.1)

2. Oct 7, 2017 by  
nisbett (765.3)

Energy transformations and the relation of energy to the status of matter.  
Fundamental laws, concepts, and modes of analysis which underlie all applications  
of energy conversion in engineering.

#### Prerequisites

A grade of "C" or better in each of the following: ~~Comp Sci 1570 or Comp Sci 1970 or  
Comp Sci 1971 or Comp Sci 1972~~; Math 1214 or Math 1208; Math 1215 or Math  
1221; Math 2222; Physics 1135 or Physics 1111.

#### 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:

The course no longer requires computer programming, so the programming course  
prerequisite is not needed.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

## Course Reviewer

## Comments

**tibbettsmg (02/15/21 1:27 pm):** Rollback: Please resubmit now that Dr. Bayless is now listed as approver for ME Chair workflow. MT

**tibbettsmg (02/15/21 3:16 pm):** proposed change would not be an affecting change and can be considered for FS21. MT

Key: 765

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/02/21 3:51 pm

Viewing: **MUSIC 3251 : From the Church to the Palace: Music ~~History and Analysis~~ of the Middle Ages and Renaissance ~~Music~~**

File: 1968.8  
Last approved: 05/24/16 4:57 am  
Last edit: 03/03/21 2:18 pm  
Changes proposed by: karmannc

Programs  
referencing this  
course  
[MUSIC-MI: Music Minor](#)  
[PROPOSED: UCT - Medieval and Renaissance Studies](#)

Requested **Spring 2022** ~~01/12/2016~~  
Effective Change  
Date

Department Arts, Languages, & Philosophy  
Discipline Music (MUSIC)  
Course Number 3251

Title  
**From the Church to the Palace: Music ~~History and Analysis~~ of the Middle Ages and Renaissance ~~Music~~**

Abbreviated **Music History to 1700** ~~Hist &~~  
Course Title ~~Analysis of Mus~~

- In Workflow
1. RPHILOSO Chair

2. CCC Secretary

3. Arts & Humanities DSCC Chair

4. Pending CCC Agenda post

5. CCC Meeting Agenda

6. Campus Curricula Committee Chair

7. FS Meeting Agenda

8. Faculty Senate Chair

9. Registrar

10. CAT entry

11. Peoplesoft

- Approval Path
1. 10/01/20 11:35 am  
Audra Merfeld-Langston  
(audram):  
Rollback to Initiator

2. 12/11/20 7:19 pm  
Audra Merfeld-



## Catalog Description

- Langston  
(audram):  
Approved for  
RPHILOSO Chair
3. 12/14/20 10:43  
am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to  
Initiator
4. 03/03/21 12:12  
pm  
Audra Merfeld-  
Langston  
(audram):  
Approved for  
RPHILOSO Chair
5. 03/03/21 2:21 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
6. 03/03/21 2:45 pm  
Petra Dewitt  
(dewittp):  
Approved for Arts  
& Humanities  
DSCC Chair
7. 03/24/21 9:10 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
8. 04/13/21 10:32  
am

Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda  
9. 04/13/21 10:59  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

### History

1. May 24, 2016 by  
denises (1968.1)

**Examines the development** ~~General survey~~ of **Western art** ~~history of~~ music from **Ancient Greece** ~~Greek period~~ to the 18th century. **The lives of significant composers, as well as the political and social trends that influenced their careers, will also be studied.** Score reading **required, but prior music reading experience is not necessary.** ~~required.~~

### Prerequisites

**History 1100, or English 1120, or Music 1150, or consent of instructor.**

### 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:

This is a rebranding of the current MUSIC 3251 that includes a new title and a more detailed course description. The hope is that these changes will present a clearer picture of the course content and make it more attractive to students. It is also expected that the course would become an option for students pursuing the Department of History and Political Science's new certificate in Medieval and Renaissance studies (which is another reason for the title change).

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**audram (10/01/20 11:35 am):** Rollback: Course title needs to be changed so that it is not gendered. I've asked the music faculty to work on this.

**tibbettsmg (12/14/20 10:43 am):** Rollback: There is more than 50% change in title and course content, requiring course to be submitted as a new EC (or New course proposal if required for a program). MT

**tibbettsmg (03/03/21 2:18 pm):** past deadline for FS21. Effective date changed to Sp22. Content of course not changing. Elaborating on content of course within the description. MT

Key: 1968

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/03/21 11:47 am

Viewing: **MUSIC 3252 : Kings, Queens, and Guillotines: History and Analysis of Music in the Enlightenment and Beyond H**

File: 1656.7

Last approved: 07/27/20 6:00 am

Last edit: 03/03/21 2:27 pm

Changes proposed by: karmannc

Programs  
referencing this  
course  
[MUSIC-MI: Music Minor](#)

Other Courses  
referencing this  
course  
In The Catalog Description:  
[HISTORY 3722 : History and Analysis of Music II](#)

Requested	Spring 2022 <del>Fall 2020</del>
Effective Change Date	
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	3252
Title	

- In Workflow
1. RPHILOSO Chair

2. CCC Secretary

3. Arts & Humanities DSCC Chair

4. Pending CCC Agenda post

5. CCC Meeting Agenda

6. Campus Curricula Committee Chair

7. FS Meeting Agenda

8. Faculty Senate Chair

9. Registrar

10. CAT entry

11. Peoplesoft

- Approval Path
1. 09/30/20 8:45 am  
Audra Merfeld-Langston  
(audram):  
Rollback to Initiator

2. 10/01/20 11:35 am  
Audra Merfeld-

<b>Kings, Queens, and Guillotines: History and Analysis of Music in the Enlightenment and Beyond</b> ‡		Langston (audram): Rollback to Initiator
Abbreviated Course Title	<b>Music History 1700-pres Hist</b> <del>&amp; Analysis Mus H</del>	3. 12/11/20 7:22 pm Audra Merfeld- Langston (audram): Approved for RPHILOSO Chair
Catalog Description		4. 12/14/20 10:44 am Marita Tibbetts (tibbettsmg): Rollback to Initiator
		5. 03/03/21 12:13 pm Audra Merfeld- Langston (audram): Approved for RPHILOSO Chair
		6. 03/03/21 2:28 pm Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
		7. 03/03/21 4:02 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair
		8. 03/24/21 9:12 am Marita Tibbetts

(tibbettsmg):

Approved for

Pending CCC

Agenda post

9. 04/13/21 10:33

am

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Meeting Agenda

10. 04/13/21 10:59

am

Stephen Raper

(sraper):

Approved for

Campus Curricula

Committee Chair

## History

1. May 24, 2016 by  
denises (1656.1)

2. Jul 27, 2020 by  
karmannc  
(1656.5)

**Examines the development** General survey of **Western art history of** music from **the** the 18th century to the the present. **The lives of significant composers, as well as the political and social trends that shaped their careers, will also be studied. Score reading required, but prior music experience is not necessary. Score reading required.**

## Prerequisites

**History 1200 or English 1120 or Music 1150 or consent of instructor.**

## 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:

This is a rebranding of the current MUSIC 3252 that includes a new title and more detailed course description. The hope is that these changes will present a clearer picture of the course content and make it more attractive to students

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

HISTORY 3722 - History and Analysis of Music II

Course Reviewer

Comments

**audram (09/30/20 8:45 am):** Rollback: Rolling back per your request.

**audram (10/01/20 11:35 am):** Rollback: Course title needs to be changed so that it is not gendered. I've asked the music faculty to work on this.

**tibbettsmg (12/14/20 10:44 am):** Rollback: There is more than 50% change in title and course content, requiring course to be submitted as a new EC (or New course proposal if required for a program). MT

**tibbettsmg (03/03/21 2:27 pm):** past deadline for FS21. Content of course not changing. Change is further elaborating on currently approved content within the description. MT





# Course Change Request

Date Submitted: 03/09/21 3:44 pm

Viewing: **NUC ENG 4257 : Two-phase Flow in Energy Systems - I**

File: 2294.1

Last edit: 04/13/21 10:33 am

Changes proposed by: luksc

Programs  
referencing this  
course

[MC ENG-BS: Mechanical Engineering BS](#)

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

Department Mining & Nuclear Engineering  
Discipline Nuclear Engineering (NUC ENG)  
Course Number 4257

Title  
Two-phase Flow in Energy Systems - I

Abbreviated Two-phase Flow Systems-I  
Course Title

Catalog  
Description

## In Workflow

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

## Approval Path

- 1. 03/12/21 11:55 am  
AYODEJI Alajo (alajoa):  
Approved for NUC ENG Chair
- 2. 03/12/21 12:10 pm  
Marita Tibbetts (tibbettsmg):

Approved for CCC  
Secretary

3. 03/18/21 8:14 am

Stephen Raper  
(sraper):

Approved for  
Engineering DSCC  
Chair

4. 03/24/21 9:15 am

Marita Tibbetts  
(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:34  
am

Marita Tibbetts  
(tibbettsmg):

Approved for CCC  
Meeting Agenda

6. 04/13/21 11:00  
am

Stephen Raper  
(sraper):

Approved for  
Campus Curricula  
Committee Chair

It is an introductory course for both undergraduate or graduate students who are interested in the application of two-phase flow in energy systems. It will acquaint students with governing equations for both single-phase and two-phase fluid flow, state-of-the-art analytical methods and various two-phase flow phenomena related to energy systems.

#### Prerequisites

Nuc Eng 3221 or Chem Eng **3101** ~~3100~~ or Mech Eng 3131.

## Field Trip Statement

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

Justification for  
change:

ChemEng 3100 has been replaced by Chem Eng 3101

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

## Course Reviewer Comments

**tibbettsmg (03/12/21 12:10 pm):** 4257 is not being offered for FS21, therefore not an affecting change. ChE3100 proposed to deactivate effective FS21. MT

Key: 2294

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/03/21 1:52 pm

Viewing: **NUC ENG 4281 : Probabilistic Risk Assessment †**

File: 453.1

Last edit: 03/18/21 8:13 am

Changes proposed by: schlegelj

Programs  
referencing this  
course

[SFTYENG-CT: Safety Engineering](#)

Requested	Spring 2022 <del>08/01/2014</del>
Effective Change	
Date	
Department	Mining & Nuclear Engineering
Discipline	Nuclear Engineering (NUC ENG)
Course Number	4281
Title	Probabilistic Risk Assessment †
Abbreviated	Prob Risk Assessment †
Course Title	

Catalog  
Description

- In Workflow
- 1. NUC 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. 10/16/20 2:01 pm  
Marita Tibbetts (tibbettsmg):  
Rollback to Initiator
  - 2. 11/06/20 9:46 am  
Marita Tibbetts (tibbettsmg):  
Rollback to Initiator

3. 11/10/20 1:58 pm  
AYODEJI Alajo  
(alajoa):  
Approved for NUC  
ENG Chair
4. 11/10/20 2:47 pm  
Marita Tibbetts  
(tibbettsmg):  
Rollback to  
Initiator
5. 01/12/21 2:30 pm  
AYODEJI Alajo  
(alajoa):  
Approved for NUC  
ENG Chair
6. 03/03/21 9:42 am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to  
Initiator
7. 03/12/21 11:55  
am  
AYODEJI Alajo  
(alajoa):  
Approved for NUC  
ENG Chair
8. 03/12/21 12:11  
pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
9. 03/18/21 8:14 am  
Stephen Raper  
(sraper):  
Approved for

Engineering DSCC  
Chair

10. 03/24/21 9:16 am

Marita Tibbetts

(tibbettsmg):

Approved for

Pending CCC

Agenda post

11. 04/13/21 10:34

am

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Meeting Agenda

12. 04/13/21 11:00

am

Stephen Raper

(sraper):

Approved for

Campus Curricula

Committee Chair

A **discussion 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. power industry. Classification of accidents, fault tree analysis, consequences, figures of merit, and use of probabilistic risk analysis in regulation are discussed.** ~~Emphasis is placed on fault tree analysis.~~

Prerequisites

~~Nuc Eng 3205.~~

Field Trip

Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Required for Majors	No
Elective for Majors	Yes <del>No</del>

Justification for change:

Updating course title and description language in preparation for co-listing the course. "I" was removed from the course title, as there is no follow-up course at the undergraduate level.

Semesters previously offered as an experimental course

Co-Listed Courses:

**ENG MGT 4281 - Probabilistic Risk Analysis**

Course Reviewer

Comments

**tibbettsmg (10/16/20 2:01 pm):** Rollback: rollback for addt'l edits per your request.

MT

**tibbettsmg (11/06/20 9:46 am):** Rollback: rollback for modification per request. MT

**tibbettsmg (11/10/20 2:47 pm):** Rollback: rollback to remove prereq. MT

**tibbettsmg (03/03/21 9:42 am):** Rollback: rollback to add co-list

**tibbettsmg (03/12/21 12:11 pm):** changed eff. date to Sp22. MT

**sraper (03/17/21 2:43 pm):** Changed to elective for majors.

**sraper (03/18/21 8:13 am):** Changed An to A

Key: 453

[Preview Bridge](#)

# Course Change Request

Date Submitted: 01/19/21 4:06 pm

Viewing: **NUC ENG 4428 : Reactor Laboratory I**

File: 595.1

Last edit: 04/13/21 10:34 am

Changes proposed by: schlegelj

Programs  
referencing this  
course

[NU ENG-BS: Nuclear Engineering BS](#)

Other Courses  
referencing this  
course

In The Prerequisites:

[NUC ENG 4438 : Reactor Laboratory II](#)

[NUC ENG 5438 : Reactor Laboratory II](#)

## In Workflow

- 1. **NUC 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

Requested **Spring 2022 ~~08/14/2018~~**

Effective Change  
Date

Department Mining & Nuclear Engineering  
Discipline Nuclear Engineering (NUC ENG)  
Course Number 4428  
Title Reactor Laboratory I  
Abbreviated Reactor Laboratory I  
Course Title

## Approval Path

- 1. 03/12/21 11:55 am  
AYODEJI Alajo (alajoa):  
Approved for NUC ENG Chair
- 2. 03/12/21 12:12 pm  
Marita Tibbetts (tibbettsmg):



## Catalog Description

- Approved for CCC  
Secretary
3. 03/18/21 8:14 am  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
4. 03/24/21 9:16 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:38  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 11:00  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

Acquaints the student with neutron flux measurement, reactor operation, control rod calibration, reactor power measurement and neutron activation experiments. Experiments with the thermal column and neutron beam port are also demonstrated.

### Prerequisites

Nuc Eng 4312, **Nuc Eng 3205**.

Field Trip  
Statement

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

Justification for  
change:  
Adding content to the course

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer  
Comments  
**tibbettsmg (03/12/21 12:12 pm):** changed eff. date to Sp22. MT

Key: 595

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/03/21 1:53 pm

Viewing: **NUC ENG 5281 : Introduction to Probabilistic Risk Assessment †**

File: 1601.1

Last edit: 03/12/21 12:13 pm

Changes proposed by: schlegelj

Programs  
referencing this  
course

[NUNOPRO-CT: Nuclear Nonproliferation](#)

Requested	Spring 2022 <del>08/01/2014</del>
Effective Change	
Date	
Department	Mining & Nuclear Engineering
Discipline	Nuclear Engineering (NUC ENG)
Course Number	5281
Title	<b>Introduction to</b> Probabilistic Risk Assessment †
Abbreviated	<b>Intro</b> Prob Risk <b>Assess</b>
Course Title	<del>Assessment</del> †

Catalog  
Description

- In Workflow
1. NUC 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. 10/16/20 1:58 pm  
Marita Tibbetts (tibbettsmg):  
Rollback to Initiator

2. 11/06/20 9:46 am  
Marita Tibbetts (tibbettsmg):  
Rollback to Initiator

3. 11/10/20 1:59 pm  
AYODEJI Alajo  
(alajoa):  
Approved for NUC  
ENG Chair
4. 03/03/21 9:42 am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to  
Initiator
5. 03/12/21 11:55  
am  
AYODEJI Alajo  
(alajoa):  
Approved for NUC  
ENG Chair
6. 03/12/21 12:13  
pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
7. 03/18/21 8:14 am  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
8. 03/24/21 9:16 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
9. 04/13/21 10:38  
am

Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda  
10. 04/13/21 11:00  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

**An introduction to advanced** ~~A study of the~~ techniques for **assessing** ~~qualitative and quantitative assessment of~~ reliability, safety and risk **in** ~~associated with~~ complex **systems.** ~~systems such as those encountered in the nuclear power industry.~~  
**Classification of initiating events, fault tree analysis, consequences, figures of merit, and use of probabilistic risk analysis in regulation are discussed using examples and applied through a simple case study.** ~~Emphasis is placed on fault tree analysis.~~

Prerequisites

~~Nuc Eng 3205.~~

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:

Course title and description updates in preparation for co-listing. "Introduction to" was added to the title because a 6000-level follow up "advanced" course is being considered.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed

Courses:

**SYS ENG 5281 - Course Not Found**

Course Reviewer

Comments

**tibbettsmg (10/16/20 1:58 pm):** Rollback: rollback for addt'l edits per request. MT

**tibbettsmg (11/06/20 9:46 am):** Rollback: rollback for modification per request. MT

**tibbettsmg (03/03/21 9:42 am):** Rollback: rollback to add co-list

**tibbettsmg (03/12/21 12:13 pm):** updated eff date to Sp22. MT

Key: 1601

[Preview Bridge](#)

# Course Change Request

Date Submitted: 01/19/21 4:09 pm

Viewing: **NUC ENG 5428 : Reactor Laboratory I**

File: 617.1

Last edit: 04/13/21 10:39 am

Changes proposed by: schlegelj

Programs  
referencing this  
course

[NU ENG-BS: Nuclear Engineering BS](#)

Requested	Spring 2022 <del>08/14/2018</del>
Effective Change	
Date	
Department	Mining & Nuclear Engineering
Discipline	Nuclear Engineering (NUC ENG)
Course Number	5428
Title	Reactor Laboratory I
Abbreviated	Reactor Laboratory I
Course Title	

Catalog  
Description

## In Workflow

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

## Approval Path

1. 03/12/21 11:55 am  
AYODEJI Alajo (alajoa):  
Approved for NUC ENG Chair
2. 03/12/21 12:14 pm  
Marita Tibbetts (tibbettsmg):

Approved for CCC  
Secretary

3. 03/18/21 8:14 am

Stephen Raper  
(sraper):

Approved for  
Engineering DSCC  
Chair

4. 03/24/21 9:17 am

Marita Tibbetts  
(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:39

am

Marita Tibbetts  
(tibbettsmg):

Approved for CCC  
Meeting Agenda

6. 04/13/21 11:00

am

Stephen Raper  
(sraper):

Approved for  
Campus Curricula  
Committee Chair

Acquaints the student with neutron flux measurement, reactor operation, control rod calibration, reactor power measurement and neutron activation experiments. Experiments with the thermal column and neutron beam port are also demonstrated.

#### Prerequisites

Nuc Eng 4312, **Nuc Eng 3205**.



## Field Trip Statement

Credit Hours	LEC: <b>2</b> <del>1</del>	LAB: 1	IND: 0	RSD: 0
Total:	<b>3</b> <del>2</del>			
Required for Majors	No			
Elective for Majors	<b>Yes</b> <del>No</del>			

Justification for  
change:

Adding course content

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

## Course Reviewer Comments

**tibbettsmg (03/12/21 12:14 pm):** Updated eff. date to Sp22. MT

Key: 617

[Preview Bridge](#)

# Course Change Request

Date Submitted: 01/19/21 4:08 pm

Viewing: **NUC ENG 5438 : Reactor Laboratory II**

File: 1652.1

Last edit: 04/13/21 10:43 am

Changes proposed by: schlegelj

Programs  
referencing this  
course

[NU ENG-BS: Nuclear Engineering BS](#)

Requested **Spring 2022 ~~08/14/2018~~**

Effective Change  
Date

Department Mining & Nuclear Engineering

Discipline Nuclear Engineering (NUC ENG)

Course Number 5438

Title  
Reactor Laboratory II

Abbreviated Reactor Laboratory II  
Course Title

Catalog  
Description

## In Workflow

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

## Approval Path

- 1. 03/12/21 11:55 am  
AYODEJI Alajo (alajoa):  
Approved for NUC ENG Chair
- 2. 03/12/21 12:15 pm  
Marita Tibbetts (tibbettsmg):

Approved for CCC  
Secretary

3. 03/18/21 8:14 am

Stephen Raper  
(sraper):

Approved for  
Engineering DSCC  
Chair

4. 03/24/21 9:17 am

Marita Tibbetts  
(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:43

am

Marita Tibbetts  
(tibbettsmg):

Approved for CCC  
Meeting Agenda

6. 04/13/21 11:00

am

Stephen Raper  
(sraper):

Approved for  
Campus Curricula  
Committee Chair

A continuation of Nuclear Engineering **4428** ~~304~~ with experiments of a more advanced nature.

#### Prerequisites

Nuc Eng **4428 or Nuc Eng 5428.** ~~4428.~~

#### Field Trip

#### Statement

Credit Hours	LEC: 1	LAB: 1	IND: 0	RSD: 0
Total: 2				
Required for Majors	Yes <del>No</del>			
Elective for Majors	No			

Justification for  
change:

Compatibility with Graduate Track Pathway students

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**tibbettsmg (03/12/21 12:15 pm):** updated eff. term to Sp22. MT

Key: 1652

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/04/21 11:28 am

Viewing: **PSYCH 4340 3340 : Assessment of Student Learning**

File: 4725.15

Last approved: 03/04/21 6:01 am

Last edit: 03/05/21 6:38 am

Changes proposed by: murray

Requested Spring **2022 2021**

Effective Change

Date

Department Psychological Science

Discipline Psychology (PSYCH)

Course Number **4340 3340**

Title

Assessment of Student Learning

Abbreviated Assessment of Learning

Course Title

Catalog

Description

## In Workflow

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

## Approval Path

1. 03/04/21 11:29 am  
Susan Murray (murray):  
Approved for RPSYCHOL Chair
2. 03/05/21 9:42 am  
Marita Tibbetts (tibbettsmg):

Approved for CCC  
Secretary

3. 03/05/21 9:44 am

Cecil Eng Huang  
Chua (cchua):  
Approved for  
Social Sciences  
DSCC Chair

4. 03/24/21 9:19 am

Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:43  
am

Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda

6. 04/13/21 11:00  
am

Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

## History

1. Nov 23, 2020 by

Devin Burns  
(burnsde)

2. Mar 3, 2021 by

tibbettsmg  
(4725.4)

3. Mar 4, 2021 by  
tibbettsmg  
(4725.10)

Students will learn to evaluate assessments for validity and reliability. Students will develop formative and summative assessments aligned with learning outcomes. Writing quality rubrics and universal design will be introduced. Students will analyze data to make instructional decisions and learn to evaluate vendor assessments.

#### Prerequisites

Educ 1040.

#### 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:

Resubmit

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer  
Comments

**tibbettsmg (03/05/21 6:38 am):** Updated effective date to Spring 22. MT

Key: 4725

[Preview Bridge](#)



# Course Change Request

Date Submitted: 03/11/21 9:49 am

Viewing: **PSYCH 6602 : Employee Affect and Behavior**

File: 4359.10

Last approved: 07/13/20 6:01 am

Last edit: 03/15/21 10:30 am

Changes proposed by: burnsde

Programs  
referencing this  
course

[INORGPS-MS: Industrial Organizational Psychology MS](#)

Requested **Spring 2022** ~~Fall 2020~~  
Effective Change  
Date

Department      Psychological Science

Discipline      Psychology (PSYCH)

Course Number      6602

Title  
Employee Affect and Behavior

Abbreviated      Affect and Behavior  
Course Title

Catalog  
Description

In Workflow

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

Approval Path

- 1. 03/14/21 7:39 pm  
Susan Murray  
(murray):  
Approved for  
RPSYCHOL Chair
- 2. 03/15/21 10:31  
am  
Marita Tibbetts  
(tibbettsmg):

Approved for CCC  
Secretary

3. 03/15/21 10:37  
am

Cecil Eng Huang  
Chua (cchua):  
Approved for  
Social Sciences  
DSCC Chair

4. 03/24/21 9:19 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:43  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda

6. 04/13/21 11:00  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

## History

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

(4359.4)

3. Jul 13, 2020 by  
burnsde (4359.7)

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

#### Prerequisites

**Psych 5020, and either preceded or accompanied by Psych 5202. ~~Psych-5020-~~**

#### 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:

Adding corequisite

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer  
Comments

Key: 4359

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/10/21 4:13 pm

Viewing: **PSYCH 6702 : Personnel Selection**

File: 4081.6

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

Last edit: 03/10/21 4:24 pm

Changes proposed by: burnsde

Programs  
referencing this  
course

[INORGPS-MS: Industrial Organizational Psychology MS](#)

Requested **Spring 2022** ~~08/14/2017~~  
Effective Change  
Date

Department Psychological Science

Discipline Psychology (PSYCH)

Course Number 6702

Title  
Personnel Selection

Abbreviated Personnel Selection  
Course Title

Catalog  
Description

## In Workflow

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

## Approval Path

- 1. 03/10/21 4:19 pm  
Susan Murray  
(murray):  
Approved for  
RPSYCHOL Chair
- 2. 03/10/21 4:24 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

3. 03/11/21 8:44 am  
Cecil Eng Huang  
Chua (cchua):  
Approved for  
Social Sciences  
DSCC Chair
4. 03/24/21 9:20 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:44  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 11:00  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

## History

1. Jun 30, 2014 by  
Lahne Black  
(lahne)
2. Jan 13, 2017 by  
weidnern  
(4081.1)

Current trends and methods in personnel recruitment and selection including classification, and promotion will be examined. An emphasis will be placed on legal and methodological considerations that can impact proper testing and assessment procedures. Cognitive abilities, personality, physical abilities, and other non-cognitive assessments will be discussed.

#### Prerequisites

Psych **5700, Psych 5202, Psych 5201.** ~~5700.~~

#### 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:

Needed to add appropriate pre-reqs so students are prepared.

Semesters previously offered as an experimental course

#### Co-Listed Courses:

Course Reviewer  
Comments

Key: 4081

[Preview Bridge](#)

# Course Change Request

Date Submitted: 03/05/21 10:52 am

Viewing: **SYS ENG 5212 : Introduction to Neural Networks and Applications**

File: 484.5

Last approved: 05/06/16 3:34 am

Last edit: 03/05/21 10:58 am

Changes proposed by: kte

Programs  
referencing this  
course

[CMPINTS-CT: Computational Intelligence](#)  
[FIN ENG-CT: Financial Engineering CT](#)  
[CMPINTE-CT: Computational Intelligence CT](#)

Other Courses  
referencing this  
course

In The Catalog Description:  
[ELEC ENG 5820 : Introduction to Neural Networks and Applications](#)

Requested	Spring 2022 <del>01/12/2016</del>
Effective Change	
Date	
Department	Engineering Management and Systems Engineering
Discipline	Systems Engineering (SYS ENG)
Course Number	5212

In Workflow

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

Approval Path

1. 03/05/21 10:55  
am  
Suzanna Long  
(longsuz):  
Approved for  
RENGMNGT Chair
2. 03/05/21 10:58  
am  
Marita Tibbetts



Title		(tibbettsmg): Approved for CCC Secretary
Introduction to Neural Networks and Applications		
Abbreviated	Intro to Neurl Netwk&App	
Course Title		3. 03/18/21 8:14 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
Catalog Description		4. 03/24/21 9:26 am Marita Tibbetts (tibbettsmg): Approved for Pending CCC Agenda post
		5. 04/13/21 10:44 am Marita Tibbetts (tibbettsmg): Approved for CCC Meeting Agenda
		6. 04/13/21 11:00 am Stephen Raper (sraper): Approved for Campus Curricula Committee Chair
		History
		1. May 6, 2016 by dagli (484.1)
The course provides an introduction to basic neural network architectures and their applications. Students learn to construct neural networks and train them to solve		

engineering problems, specifically pattern recognition and function approximation. Mathematical analysis of network architectures, training algorithms and practical applications of neural nets.

#### Prerequisites

Graduate Standing.

#### Field Trip

#### Statement

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

Justification for  
change:

Changing Elec Eng course co-list number. The second digit classifies this course as a control systems course in Elec Eng, which it is not. The second digit of 8 is a general classification.

Semesters  
previously  
offered as an  
experimental  
course

#### Co-Listed

Courses:

~~ELEC ENG 5370 - Course Not Found~~

**ELEC ENG 5820 - Introduction to Neural Networks and Applications**

#### Course Reviewer

#### Comments



Program Change Request

Date Submitted: 03/16/21 11:18 am

Viewing: **AP MATH-BS : Applied Mathematics BS**

File: 142.52

Last approved: 03/09/21 11:57 am

Last edit: 03/19/21 12:48 pm

Changes proposed by: prunnion

Catalog Pages Using this Program  
[Mathematics](#)

Start Term

Fall 2021

Program Code

AP MATH-BS

Department

Mathematics & Statistics

Title

Applied Mathematics BS

Program Requirements and Description

In Workflow

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

Approval Path

- 1. 03/15/21 3:43 pm  
vsam: Approved for RMATHEMA Chair
- 2. 03/15/21 4:24 pm  
Marita Tibbetts (tibbettsmg): Rollback to Initiator
- 3. 03/15/21 5:24 pm  
vsam: Approved for RMATHEMA Chair
- 4. 03/16/21 8:16 am  
Marita Tibbetts (tibbettsmg): Rollback to Initiator
- 5. 03/16/21 11:23 am  
vsam: Approved for RMATHEMA Chair
- 6. 03/16/21 12:27 pm  
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
- 7. 03/19/21 12:48 pm  
Katie Shannon (shannonk): Approved for

- Sciences DSCC  
Chair
8. 03/24/21 8:38 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
9. 04/13/21 9:59 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
10. 04/13/21 10:58 am  
Stephen Raper  
(sraper): Approved  
for Campus  
Curricula  
Committee Chair

History

1. Apr 28, 2014 by  
Ilene Morgan  
(imorgan)
2. Apr 28, 2014 by  
Lahne Black (lahne)
3. Jun 13, 2014 by  
pantaleoa
4. Jun 13, 2014 by  
pantaleoa
5. Jul 21, 2015 by  
pantaleoa
6. Jul 21, 2015 by  
pantaleoa
7. Apr 25, 2016 by  
Ilene Morgan  
(imorgan)
8. Aug 12, 2016 by  
cladmin-bdietzler
9. Jun 14, 2019 by  
Paul Runnion  
(prunnion)
10. Jul 1, 2020 by Paul  
Runnion (prunnion)
11. Feb 3, 2021 by Paul  
Runnion (prunnion)
12. Mar 9, 2021 by  
Marita Tibbetts  
(tibbettsmg)
13. Mar 9, 2021 by  
Marita Tibbetts  
(tibbettsmg)

## Bachelor of Science Applied Mathematics

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

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

Freshman Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MATH 1101</a>	1	<a href="#">MATH 1215</a> or <a href="#">1221</a> <sup>1</sup>	4
<a href="#">MATH 1208</a> or <a href="#">1214</a> <sup>1</sup>	4-8	Science Requirement <sup>5</sup>	5
OR		<a href="#">COMP SCI 1500</a>	3
<a href="#">MATH 1210</a> & <a href="#">MATH 1211</a>		Language and Communication Requirement <sup>3</sup>	3
<a href="#">CHEM 1100</a>	1	Basic ROTC (if elected) <sup>4</sup>	0
<a href="#">ENGLISH 1120</a>	3		
Campus History Requirement <sup>2</sup>	3		
Language and Communication Requirement <sup>3</sup>	3		
Basic ROTC (if elected) <sup>4</sup>	0		
	15-19		15
Sophomore Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MATH 2222</a> <sup>1</sup>	4	<a href="#">MATH 3304</a> <sup>1</sup>	3
<a href="#">MATH 3108</a> <sup>1</sup>	3	<a href="#">MATH 3109</a> <sup>1</sup>	3
<a href="#">COMP SCI 1570</a>	3	Statistics Requirement <sup>1,6,7</sup>	3
<a href="#">COMP SCI 1580</a>	1	<a href="#">ECON 1100</a> or <a href="#">1200</a>	3
<a href="#">PHYSICS 1135</a>	4	<a href="#">PHYSICS 2135</a>	4
<a href="#">ENGLISH 1160</a> <sup>8</sup>	3	Basic ROTC (if elected) <sup>4</sup>	0
Basic ROTC (if elected) <sup>4</sup>	0		
	18		16
Junior Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MATH 4209</a> <sup>1</sup>	3	<a href="#">MATH 4211</a> <sup>1, 12</sup>	3
Literature	3	Literature	3

Electives-Math or Stat <sup>1,7,9</sup>	3	Electives-Math or Stat <sup>1,7,9</sup>	3
Electives-Technical <sup>10</sup>	3	Electives-Technical <sup>10</sup>	3
Electives <sup>13</sup>	3	Electives <sup>13</sup>	3
	15		15
<b>Senior Year</b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
Capstone Course <sup>1,7,11</sup>	3	Electives-Math or Stat <sup>1,7,9</sup>	3
Electives-Math or Stat <sup>1,7,9</sup>	3	Electives-Technical <sup>10</sup>	3
Electives-Technical <sup>10</sup>	6	Electives <sup>13</sup>	10
Electives <sup>13</sup>	6		
	18		16
Total Credits: 128-132			

- <sup>1</sup> A minimum grade of “C” is required by the department in each course counted toward the math/stat requirement for the B.S. in applied mathematics. Moreover, the department requires that an average of at least two grade points per credit hour must be obtained for all courses taken within the department.
- <sup>2</sup> May be met by [HISTORY 1200](#), [HISTORY 1300](#), [HISTORY 1310](#), or [POL SCI 1200](#).
- <sup>3</sup> This requirement will be satisfied by either (1) six credits of Speech and Media Studies course work; or (2) a modern language approved by the advisor with competency at the level of second semester college/university course work or, with approval of the department, by completion of Level III of a foreign language in high school.
- <sup>4</sup> Basic ROTC may be elected in the freshman and sophomore years, but is not creditable toward a degree. Up to six credit hours of advanced ROTC may be credited as free electives towards a degree.
- <sup>5</sup> May be met by [CHEM 1310](#) and [CHEM 1319](#) or by [BIO SCI 1113](#) and [BIO SCI 1219](#).
- <sup>6</sup> May be met by [STAT 3113](#), [STAT 3115](#), or [STAT 3117](#).
- <sup>7</sup> No course may be used to satisfy more than one degree requirement, except as otherwise noted.
- <sup>8</sup> May also be satisfied by [ENGLISH 3560](#).
- <sup>9</sup> The student must choose two from the following five groups and then complete six hours in each of the chosen groups
  1. [MATH 5105](#), [MATH 5106](#), [MATH 5107](#), [MATH 5108](#)
  2. [MATH 5105](#), [MATH 5215](#), [MATH 4530](#) or [MATH 5530](#), [MATH 5351](#), [MATH 5585](#)
  3. [MATH 5222](#), [MATH 5302](#), [MATH 5325](#), [MATH 5351](#), [MATH 5483](#), [MATH 5603](#), [MATH 5604](#)
  4. [STAT 5814](#), [STAT 5643](#), [STAT 5644](#), [STAT 5346](#), [STAT 5353](#), [STAT 5755](#), [STAT 5756](#)
  5. [COMP SCI 3200](#), [COMP SCI 5201](#), [COMP SCI 5202](#), [MATH 5603](#), [MATH 5604](#), [MATH 5737](#), [STAT 5260](#), [STAT 5346](#), [STAT 5755](#), [STAT 5756](#), [STAT 5814](#).
- <sup>10</sup> Courses in biology, chemistry, computer science, economics, engineering, geology, mechanics, or physics approved by advisor. The general math curriculum requires 15 credit hours; actuarial science emphasis area, 12 credit hours; algebra/discrete math emphasis area, 15 credit hours; computational math emphasis area, 9 credit hours; statistics emphasis area, 12 credit hours.
- <sup>11</sup> The capstone experience for all applied mathematics majors (other than students completing the secondary education emphasis area) consists of a course chosen from the following list: [MATH 4098](#) (three credits), [MATH 4099](#) or [STAT 4099](#) (three credits), [MATH 5107](#), [MATH 5215](#), [MATH 5603](#), [STAT 5346](#), [STAT 5353](#), [STAT 5755](#), or [STAT 5756](#).
- <sup>12</sup> **Math 4211 is not required for students earning the Statistics emphasis area.**
- <sup>13</sup> **Sufficient free electives to earn a minimum of 128 credit hours.**

## Emphasis Areas at the Bachelor of Science Level

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

## Actuarial Science Emphasis Area

Required courses:

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

In addition, the student must pass the first actuarial science exam. Note that the capstone requirement is included in, not separate from, this list of courses.

When selecting a 3000-level statistics course to satisfy the major requirements, it is recommended that students pursuing an Actuarial Science emphasis select Stat 3117.

## Algebra/Discrete Mathematics Emphasis Area

Required courses:

<a href="#">MATH 5105</a>	Modern Algebra I	3
<a href="#">MATH 5106</a>	Modern Algebra II	3
or <a href="#">MATH 6105</a>	Finite Fields And Applications	
<a href="#">MATH 5107</a>	Combinatorics And Graph Theory (Satisfies Capstone requirement)	3
<a href="#">MATH 5108</a>	Linear Algebra II	3
<a href="#">STAT 5643</a>	Probability And Statistics	3
Select one of the following:		3
<a href="#">STAT 5644</a>	Mathematical Statistics	3
<a href="#">COMP SCI 2200</a>	Theory of Computer Science	3
<a href="#">COMP SCI 3200</a>	Introduction To Numerical Methods	3
<a href="#">COMP SCI 5200</a>	Analysis Of Algorithms	3

## Computational Mathematics Emphasis Area

Required courses:

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

## Applied Analysis Emphasis Area

Required:

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

## Engineering Option

Required courses:

<a href="#">CIV ENG 2200</a>	Statics	3
<a href="#">CIV ENG 2210</a>	Mechanics Of Materials	3
Select one of the following:		
<a href="#">MECH ENG 2350</a>	Engineering Mechanics-Dynamics	
<a href="#">MECH ENG 2360</a>	Dynamics	3
Select three of the following:		
Courses, which have any of the listed courses as prerequisites, may also be used to fulfill this requirement.		
<a href="#">AERO ENG 3613</a>	Aerospace Mechanics I	3
<a href="#">AERO ENG 5313</a>	Intermediate Dynamics of Mechanical and Aerospace Systems	3
<a href="#">AERO ENG 5614</a>	Spaceflight Mechanics	3
<a href="#">CHEM ENG 2100</a>	Chemical Engineering Material & Energy Balances	4
<a href="#">CHEM ENG 2110</a>	Chemical Engineering Thermodynamics I	3
<a href="#">ELEC ENG 2800</a>	Electrical Circuits	3

<a href="#">MECH ENG 3313</a>	Machine Dynamics	3
<a href="#">MECH ENG 2519</a>	Thermodynamics	3
or <a href="#">MECH ENG 2527</a>	Thermal Analysis	
<a href="#">MECH ENG 5131</a>	Intermediate Thermofluid Mechanics *	3
<a href="#">NUC ENG 3103</a>	Interactions Of Radiation With Matter	3
<a href="#">NUC ENG 4203</a>	Reactor Physics I	3
<a href="#">PET ENG 4621</a>	Fundamentals Of Petroleum Reservoir Simulation	3
<a href="#">CIV ENG 3330</a>	Engineering Fluid Mechanics	3
or <a href="#">NUC ENG 3221</a>	Reactor Fluid Mechanics	
or <a href="#">MECH ENG 3131</a>	Thermofluid Mechanics I	
<a href="#">CIV ENG 5207</a>	Computer Methods of Structural Analysis	3
<a href="#">CIV ENG 5333</a>	Intermediate Hydraulic Engineering	3
<a href="#">ELEC ENG 5370</a>	Introduction to Neural Networks and Applications	3
<a href="#">MECH ENG 5307</a>	Vibrations I	3
<a href="#">MECH ENG 5211</a>	Introduction To Continuum Mechanics	3
<a href="#">MECH ENG 5234</a>	Stability of Engineering Structures *	3
<a href="#">MECH ENG 5254</a>	Variational Formulations Of Mechanics Problems	3
<a href="#">GEO ENG 4115</a>	Statistical Methods in Geology and Engineering	3
<a href="#">GEOPHYS 3221</a>	Potential Field Theory	3

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

## Physics Option

Required courses:

<a href="#">PHYSICS 2311</a>	Modern Physics I	3
<a href="#">PHYSICS 3311</a>	Modern Physics II	3
And take at least nine additional hours of physics courses at the 2000 level or above.		9

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

## Secondary Education Emphasis Area

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

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

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

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

Freshman Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MATH 1101</a>	1	<a href="#">MATH 1215</a> or <a href="#">1221</a>	4
<a href="#">MATH 1208</a> or <a href="#">1214</a>	4 or 8	<a href="#">BIO SCI 1113</a>	3
OR		<a href="#">BIO SCI 1219</a> or <a href="#">CHEM 1319</a> (Science Lab Requirement) <sup>1</sup>	1
<a href="#">MATH 1210</a> & <a href="#">MATH 1211</a>		<a href="#">PSYCH 1101</a>	3
<a href="#">CHEM 1100</a>	1	<a href="#">EDUC 1164</a>	2
<a href="#">ENGLISH 1120</a>	3	<a href="#">EDUC 1174</a>	2
<a href="#">HISTORY 1300</a> or <a href="#">1310</a>	3		
<a href="#">EDUC 1040</a>	2		
<a href="#">EDUC 1104</a>	1		
	15-19		15
Sophomore Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MATH 2222</a>	4	<a href="#">MATH 3304</a>	3
<a href="#">MATH 3108</a>	3	<a href="#">MATH 3109</a>	3
<a href="#">COMP SCI 1500</a>	3	<a href="#">ENGLISH 1160</a>	3
<a href="#">PHYSICS 1135</a>	4	<a href="#">PHYSICS 2135</a>	4
<a href="#">SP&amp;M S 1185</a>	3	<a href="#">PSYCH 3310</a>	3
	17		16
Junior Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MATH 4209</a>	3	<a href="#">MATH 4211</a>	3
<a href="#">STAT 3113</a> , or <a href="#">3115</a> , or <a href="#">3117</a>	3	<a href="#">MATH 4530</a>	3
<a href="#">ECON 1100</a> or <a href="#">1200</a>	3	<a href="#">EDUC 3280</a>	3
<a href="#">ENGLISH 3170</a>	3	<a href="#">EDUC 3340</a>	3
<a href="#">EDUC 3216</a>	3	Fine Art Elective <sup>2</sup>	3
<a href="#">EDUC 3298</a>	1	<a href="#">PSYCH 2300</a> or <a href="#">EDUC 2102</a>	3
	16		18
Senior Year			
First Semester	Credits	Second Semester	Credits
Electives-Math or Stat <sup>4</sup>	6	<a href="#">EDUC 4298</a> & <a href="#">EDUC 4299</a> <sup>3</sup>	13
<a href="#">PSYCH 4310</a> or <a href="#">EDUC 2310</a>	3		
<a href="#">POL SCI 1200</a>	3		

Literature	3	
<b>Electives</b>	<b>2</b>	
<b>Electives<sup>6</sup></b>	<b>3</b>	
	18	13
Total Credits: 128-132		

<sup>1</sup> May be met by [BIO SCI 1219](#) or [CHEM 1319](#)

<sup>2</sup> Any three-hour course from the areas of foreign language, music, theater, philosophy or art.

<sup>3</sup> Student Teaching satisfies the capstone requirement for students completing this emphasis area.

<sup>4</sup> Any two three-hour courses from the following list with the approval of the mathematics education advisor. [MATH 5105](#), [MATH 5106](#), [MATH 5107](#), [MATH 5108](#), [MATH 5215](#), [MATH 5222](#), [MATH 5302](#), [MATH 5325](#), [MATH 5351](#), [MATH 5483](#), [MATH 5585](#), [STAT 5643](#), [STAT 5644](#), [STAT 5346](#), [STAT 5353](#), [COMP SCI 3200](#), [COMP SCI 5201](#), [COMP SCI 5202](#), [MATH 5737](#).

<sup>5</sup> [COMP SCI 1570](#) if not transferred in will require [COMP SCI 1580](#), requiring one extra credit hour which will count either towards technical electives or free electives.

<sup>6</sup> **Sufficient free electives to earn a minimum of 128 credit hours.**

## Statistics Emphasis Area

Required courses:

<a href="#">STAT 5643</a>	Probability And Statistics	3
<a href="#">STAT 5644</a>	Mathematical Statistics	3
<a href="#">STAT 5346</a>	Regression Analysis <sup>2</sup>	3
<a href="#">STAT 5353</a>	Statistical Data Analysis (Satisfies Capstone requirement) <sup>1</sup>	3
Select one of the following:		6
<del>BIO SCI 2223</del>	<del>General Genetics</del>	<del>3</del>
<del>COMP SCI 3200</del>	<del>Introduction To Numerical Methods</del>	<del>3</del>
<a href="#">STAT 5260</a>	Statistical Data Analysis Using SAS	3
<a href="#">STAT 5814</a>	Applied Time Series Analysis	3
<del>And complete either A or B:</del>		<del>6</del>
or another approved computational statistics course		
<del>MATH 5215</del>	<del>Introduction To Real Analysis</del>	<del>3</del>
<del>MATH 5351</del>	<del>Introduction To Complex Variables</del>	<del>3</del>
Complete the following CS courses (in addition to those required for all Applied Mathematics majors):		
<del>MATH 5107</del>	<del>Combinatorics And Graph Theory</del>	<del>3</del>
<del>MATH 5108</del>	<del>Linear Algebra II</del>	<del>3</del>
<del>MATH 5603</del>	<del>Methods of Applied Mathematics</del>	<del>3</del>
<a href="#">COMP SCI 1200</a>	Discrete Mathematics for Computer Science <sup>2</sup>	3
<a href="#">COMP SCI 1575</a>	Data Structures <sup>2</sup>	3
<a href="#">COMP SCI 1585</a>	Data Structures Laboratory <sup>2</sup>	1
<a href="#">COMP SCI 2300</a>	File Structures and Introduction to Database Systems <sup>2</sup>	3
<a href="#">COMP SCI 2500</a>	Algorithms <sup>2</sup>	3

and one of the following two courses:

<a href="#">COMP SCI 5400</a>	Introduction To Artificial Intelligence <sup>2</sup>	3
<a href="#">COMP SCI 5402</a>	Introduction to Data Mining <sup>2</sup>	3

<sup>1</sup> Satisfies Capstone requirement.

<sup>2</sup> Satisfies the requirements for a minor in Computer Science (when combined with [COMP SCI 1500](#), [COMP SCI 1570](#), and [COMP SCI 1580](#) which are required for all Applied Mathematics majors).

#### Justification for request

First, with regards to footnote 13 on the main degree, the intent of the previous degree change which added the option of the new Math 1210/1211 instead of Math 1214 was that students taking Math 1210 and 1211 would simply be required to take four fewer free electives. (Note that many other degree programs may choose to not adjust free electives - this is simply an internal decision made within the Department of Mathematics and Statistics for our majors.) I'm hopeful that somebody who knows their way around this system better than I do can "massage" it and make it show that only 128 hours is required regardless.

Most changes on this DC form are centered around the substantial changes to the statistics emphasis area. The old version of the emphasis was really designed more for students who intended to pursue graduate study than for students who intended to go to industry. We are making these changes so that the degree is more of an applied degree leading toward industry employment. Should a student wish to pursue graduate studies, the courses no longer listed as options would in almost all cases be available to students as part of a graduate program, and thus this should not disadvantage any students in any way whatsoever. Furthermore, due to the increasing importance of programming, database, and machine learning concepts in statistics, we have elected to build in a computer science minor for these students. Students completing this degree will be extraordinarily well prepared for employment in a wide variety of industries or for graduate study.

On the secondary education side, we are making the changes requested by the education department. We have the same issue with the total number of credits (caused by 1210-1211) that we do with the general degree, so I'm hopeful that somebody who knows their way around this system better than I do can again "massage" it and make it show that a minimum of 128 hours is required regardless.

#### Supporting Documents

##### Course Reviewer Comments

**tibbettsmg (03/15/21 4:24 pm):** Rollback: rollback for additional changes in the secondary education emphasis area. MT

**tibbettsmg (03/16/21 8:16 am):** Rollback: Educ 3001 should be Educ 3298. mt

**tibbettsmg (03/16/21 12:23 pm):** modified formatting. MT

**shannonk (03/17/21 2:46 pm):** Made changes to elective hours first semester senior year since BIO SCI 1219 is now 1 hour instead of 2. In consultation with Paul Runnion

**shannonk (03/19/21 12:48 pm):** now labs have same number of hours so no extra electives needed if Chem lab is taken instead of Bio

Key: 142

## Program Change Request

Date Submitted: 03/11/21 11:43 am

Viewing: **CH ENG-BS : Chemical Engineering BS**

File: 150.82

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

Last edit: 04/14/21 9:24 am

Changes proposed by: luksc

Catalog Pages Using this Program  
[Chemical & Biochemical Engineering](#)

Start Term

Fall **2021** ~~2020~~

Program Code

CH ENG-BS

Department

Chemical and Biochemical Engineering

Title

Chemical Engineering BS

### Program Requirements and Description

### In Workflow

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

### Approval Path

1. 03/09/21 3:14 pm  
Hu Yang (huyang): Rollback to Initiator
2. 03/09/21 3:31 pm  
Hu Yang (huyang): Approved for RCHEMENG Chair
3. 03/09/21 3:54 pm  
Marita Tibbetts (tibbettsmg): Rollback to Initiator
4. 03/11/21 11:48 am  
Hu Yang (huyang): Approved for RCHEMENG Chair
5. 03/11/21 11:56 am  
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
6. 03/18/21 8:14 am  
Stephen Raper (sraper): Approved for Engineering DSCC Chair
7. 03/24/21 8:52 am  
Marita Tibbetts

- (tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
8. 04/13/21 10:00 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
9. 04/13/21 10:58 am  
Stephen Raper  
(sraper): Approved  
for Campus  
Curricula  
Committee Chair
10. 04/14/21 9:23 am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to CCC  
Meeting Agenda for  
FS Meeting Agenda
11. 04/14/21 9:25 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
12. 04/14/21 9:38 am  
Stephen Raper  
(sraper): Approved  
for Campus  
Curricula  
Committee Chair

## History

1. Mar 18, 2014 by  
Lahne Black (lahne)
2. May 2, 2014 by  
Lahne Black (lahne)
3. Jan 30, 2015 by  
kleb6b
4. Jul 15, 2015 by  
pantaleoa
5. Jul 15, 2015 by  
pantaleoa
6. Nov 18, 2015 by  
marlene
7. Mar 7, 2016 by  
Daniel Forciniti  
(forcinit)
8. Mar 27, 2017 by  
Daniel Forciniti  
(forcinit)



9. May 3, 2018 by Daniel Forciniti (forcinit)
10. May 7, 2018 by Brittany Parnell (ershenb)
11. May 7, 2018 by Brittany Parnell (ershenb)
12. May 7, 2018 by Brittany Parnell (ershenb)
13. Jul 3, 2018 by Brittany Parnell (ershenb)
14. Nov 2, 2018 by Jee C. Wang (jcwang)
15. Jan 29, 2019 by Jee C. Wang (jcwang)
16. Jan 30, 2019 by Brittany Parnell (ershenb)
17. Jan 30, 2019 by Brittany Parnell (ershenb)
18. Mar 3, 2020 by Brittany Parnell (ershenb)

## Bachelor of Science Chemical Engineering

Entering freshmen desiring to study chemical engineering will be admitted to the Foundational Engineering and Computing Program. They will be permitted, if they wish, to state a chemical 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 chemical engineering a minimum of **128** ~~129~~ 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 chemical engineering.

Each student's program of study must contain a minimum of 21 credit hours of course work in general education and must be chosen according to the following rules:

1. All students are required to take one American history course, one economics course, one humanities course, and [ENGLISH 1120](#). The history course is to be selected from [HISTORY 1200](#), [HISTORY 1300](#), [HISTORY 1310](#), or [POL SCI 1200](#). The economics course may be either [ECON 1100](#) or [ECON 1200](#). The humanities course must be selected and meets the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog.

2. Depth requirement. Three credit hours must be taken in humanities or social sciences at the 1000 level or above and must be selected from the approved list. This course must have as a prerequisite one of the humanities or social sciences courses already taken. Foreign language courses numbered 1180 will be considered to satisfy this requirement. Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 3000 level or above. All courses taken to satisfy the depth requirement must be taken after graduating from high school.
3. The remaining two courses are to be chosen and meets the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog and may include one communications course in addition to [ENGLISH 1120](#).
4. Any specific departmental requirements in the general studies area must be satisfied and meets the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog.
5. Special topics and special problems and honors seminars are allowed only by petition to and approval by the student's department chairman.

The chemical 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.

Freshman Year			
First Semester	Credits	Second Semester	Credits
<a href="#">FR ENG 1100</a>	1	<a href="#">MECH ENG 1720</a>	3
<a href="#">CHEM 1310</a>	4	<a href="#">CHEM 1320</a>	3
<a href="#">CHEM 1319</a>	1	<a href="#">COMP SCI 1500</a>	3
<a href="#">ENGLISH 1120</a>	3	OR	
<a href="#">HISTORY 1200</a> , or <a href="#">1300</a> , or <a href="#">1310</a> , or <a href="#">POL SCI 1200</a>	3	<a href="#">COMP SCI 1972</a> & <a href="#">COMP SCI 1982</a>	
<a href="#">MATH 1214</a>	4	<del>COMP SCI 1982, or 1981, or 1580<sup>7</sup></del>	4
<a href="#">CHEM 1100</a>	1	<a href="#">MATH 1215</a>	4
		<a href="#">PHYSICS 1135</a>	4
	17		17
Sophomore Year			
First Semester	Credits	Second Semester	Credits
<a href="#">CHEM ENG 2100</a> <sup>1</sup>	4	<a href="#">CHEM ENG 2110</a> <sup>1</sup>	3
<a href="#">CHEM ENG 2300</a>	1	<a href="#">CHEM ENG 2310</a> <sup>2</sup>	1
<a href="#">CHEM 2210</a>	3	Science Elective <sup>5</sup>	4
<a href="#">MATH 2222</a>	4	<a href="#">MATH 3304</a>	3
<a href="#">PHYSICS 2135</a>	4	<a href="#">STAT 3113</a>	3
		Humanities and Social Sciences Elective <sup>4</sup>	3
	16		17
Junior Year			
First Semester	Credits	Second Semester	Credits
<a href="#">CHEM ENG 3101</a>	4	<a href="#">CHEM ENG 3131</a>	3
<a href="#">CHEM ENG 3111</a>	3	<a href="#">CHEM ENG 3141</a>	3
<a href="#">CHEM ENG 3120</a> <sup>1</sup>	3	<a href="#">CHEM ENG 3150</a>	3

<a href="#">ECON 1100</a> or <a href="#">1200</a>	3	<del>ENGLISH 1160 or 3560</del>	<del>3</del>
Upper level Humanities or Social Science Elective <sup>4</sup>	3	<a href="#">SP&amp;M S 1185</a>	3
		<a href="#">ENGLISH 3560</a>	<b>3</b>
<b>Senior Year<sup>3</sup></b>	16		15
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
<a href="#">CHEM ENG 4091</a>	3	<a href="#">CHEM ENG 4097</a> <sup>2</sup>	3
<a href="#">CHEM ENG 4101</a> <sup>2</sup>	3	<a href="#">CHEM ENG 4130</a> <sup>2</sup>	3
<a href="#">CHEM ENG 4110</a>	3	CHEM ENG 5XXX-Chem Eng Elective <sup>6</sup>	3
<a href="#">CHEM ENG 4241</a>	3	Chem Eng 5xxx --Chem Eng Elective <sup>6</sup>	3
CHEM ENG 5XXX-Chem Eng Elective <sup>6</sup>	3	Chem Eng 5xxx -Chem Eng Elective <sup>6</sup>	3
	15		15
Total Credits: 128			

**Note:** The minimum number of hours required for a degree in chemical engineering is **128. 429.**

A cumulative grade point average of 2.50 or better and a "C" or better in [CHEM 1310](#), [CHEM 1319](#), [CHEM 1320](#), [MATH 1214](#), [MATH 1215](#) and [PHYSICS 1135](#) are required to be admitted into the chemical engineering major.

<sup>1</sup>	A grade of "C" or better is required in <a href="#">CHEM ENG 2100</a> & <a href="#">CHEM ENG 2110</a> in order to enroll in Chem Eng 3120 .
<sup>2</sup>	Communications emphasized course (See bachelor of science degree, general education communications requirement).
<sup>3</sup>	Chemical engineering majors are encouraged to take the fundamentals of engineering exam prior to graduation. It is the first step toward becoming a registered professional engineer.
<sup>4</sup>	Must meet the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog. The prerequisites for the upper level course must be completed with a passing grade.
<sup>5</sup>	<a href="#">CHEM 2510</a> , or <a href="#">CHEM 4610</a> and <a href="#">CHEM 4619</a> , or <a href="#">BIO SCI 2213</a> and <a href="#">BIO SCI 2219</a> , or <a href="#">CHEM 2220</a> and <a href="#">CHEM 2219</a> , or <a href="#">Bio Sci 3313</a> and <a href="#">Bio Sci 3319</a> , or <a href="#">CHEM 3420</a> and <a href="#">CHEM 3459</a> .
<sup>6</sup>	A minimum of 12 cr. hr. from any Chem Eng 5xxx and any class from the approved list published on the Chemical Engineering web site but only 3 cr. hr. of <a href="#">CHEM ENG 4000</a> , <a href="#">CHEM ENG 4099</a> or Chem Eng 4099H. Students may have no more than three hours from approved out-of-department electives.
<sup>7</sup>	The programming elective will consist of a lecture and lab combination, and may be selected from <a href="#">COMP SCI 1971/COMP SCI 1981</a> , <a href="#">COMP SCI 1972/COMP SCI 1982</a> , or <a href="#">COMP SCI 1570/COMP SCI 1580</a> . Note that <a href="#">COMP SCI 1570/COMP SCI 1580</a> requires one more credit hour than the other option. The lecture component must be completed with a grade of "C" or better.

## Chemical Engineering Biochemical Engineering Emphasis

<b>Freshman Year</b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
<a href="#">FR ENG 1100</a>	1	<a href="#">MECH ENG 1720</a>	3
<a href="#">CHEM 1310</a>	4	<a href="#">COMP SCI 1500</a>	<b>3</b>
<a href="#">CHEM 1319</a>	1	<b>OR</b>	

<a href="#">ENGLISH 1120</a>	3	<a href="#">COMP SCI 1972</a> & <a href="#">COMP SCI 1982</a>	
<a href="#">HISTORY 1200</a> , or <a href="#">1300</a> , or <a href="#">1310</a> , or <a href="#">POL SCI 1200</a>	3	<del>COMP SCI 1982, or 1981, or 1580</del> <sup>6</sup>	4
<a href="#">MATH 1214</a>	4	<a href="#">CHEM 1320</a>	3
<a href="#">CHEM 1100</a>	1	<a href="#">MATH 1215</a>	4
		<a href="#">PHYSICS 1135</a>	4
	17		17
<b>Sophomore Year</b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
<a href="#">CHEM ENG 2100</a> <sup>1</sup>	4	<a href="#">CHEM ENG 2110</a> <sup>1</sup>	3
<a href="#">CHEM ENG 2300</a>	1	<a href="#">CHEM ENG 2310</a> <sup>2</sup>	1
<a href="#">CHEM 2210</a>	3	<a href="#">STAT 3113</a>	3
<a href="#">MATH 2222</a>	4	Science Elective <sup>5</sup>	4
<a href="#">PHYSICS 2135</a>	4	<a href="#">MATH 3304</a>	3
		<a href="#">ECON 1100</a> or <a href="#">1200</a>	3
	16		17
<b>Junior Year</b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
<a href="#">CHEM ENG 3101</a>	4	<a href="#">CHEM ENG 3131</a>	3
<a href="#">CHEM ENG 3111</a>	3	<a href="#">CHEM ENG 3141</a>	3
<a href="#">CHEM ENG 3120</a> <sup>1</sup>	3	<a href="#">CHEM ENG 3150</a>	3
<a href="#">SP&amp;M S 1185</a>	3	<del>ENGLISH 1160 (or English 3560)</del>	3
Science Elective <sup>5</sup>	4	Science Elective <sup>5</sup>	4
		<a href="#">ENGLISH 3560</a>	3
	17		16
<b>Senior Year<sup>3</sup></b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
<a href="#">CHEM ENG 4091</a>	3	<a href="#">CHEM ENG 4097</a> <sup>2</sup>	3
<a href="#">CHEM ENG 4110</a>	3	<a href="#">CHEM ENG 4210</a>	3
<a href="#">CHEM ENG 5250</a>	3	<a href="#">CHEM ENG 4220</a>	3
<a href="#">CHEM ENG 4201</a>	3	<a href="#">CHEM ENG 4241</a>	3
Upper Level Humanities or Social Sciences Elective <sup>4</sup>	3	Humanities or Social Science Elective <sup>4</sup>	3
	15		15
Total Credits: 130			

**Note:** The minimum number of hours required for a degree in chemical engineering with an emphasis in biochemical engineering is **130**.  
~~131~~.

A cumulative grade point average of 2.50 or better and a "C" or better in [CHEM 1310](#), [CHEM 1319](#), [CHEM 1320](#), [MATH 1214](#), [MATH 1215](#) and [PHYSICS 1135](#) are required to be admitted into the chemical engineering major.

1	A grade of "C" or better is required in <a href="#">CHEM ENG 2100</a> & <a href="#">CHEM ENG 2110</a> in order to enroll in <a href="#">CHEM ENG 3120</a> .
2	Communications emphasized course (See bachelor of science degree, general education communications requirement).
3	Chemical engineering majors are encouraged to take the fundamentals of engineering exam prior to graduation. It is the first step toward becoming a registered professional engineer.
4	Must meet the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog. The prerequisites for the upper level course must be completed with a passing grade.
5	A minimum of 12 credit hours in Science Electives are required. Select three courses from <a href="#">CHEM 2220</a> , <a href="#">CHEM 4610</a> , <a href="#">CHEM 4620</a> , <a href="#">BIO SCI 2213</a> , <a href="#">BIO SCI 3313</a> , and <a href="#">BIO SCI 4323</a> ; and a minimum of two laboratory courses from <a href="#">CHEM 2229</a> or <a href="#">CHEM 2219</a> , <a href="#">CHEM 4619</a> , <a href="#">BIO SCI 2219</a> , <a href="#">BIO SCI 3319</a> , and <a href="#">BIO SCI 4329</a> .
6	The programming elective consists of a lecture and lab combination, and may be selected from <a href="#">COMP SCI 1971/COMP SCI 1981</a> , <a href="#">COMP SCI 1972/COMP SCI 1982</a> , or <a href="#">COMP SCI 1570/COMP SCI 1580</a> . Note that <a href="#">COMP SCI 1570/COMP SCI 1580</a> requires one more credit hour than the other options. The lecture component must be completed with a grade of "C" or better.

### Justification for request

Changes in Chemistry and Computer Science offerings; English 1160 was dropped because the students lack technical writing skills

### Supporting Documents

### Course Reviewer Comments

**hy57v (03/09/21 3:14 pm):** Rollback: As per your request

**tibbettsmg (03/09/21 3:54 pm):** made formatting change to plan of study grid. MT

**tibbettsmg (03/09/21 3:54 pm):** Rollback: rollback for additional changes.

**tibbettsmg (03/11/21 11:55 am):** updated formatting. mt

**tibbettsmg (04/14/21 9:23 am):** Rollback: rollback to correct description discrepancy caught and correction approved by CCC. MT

**tibbettsmg (04/14/21 9:24 am):** updated hours in description to match plan of study hours. mt

Key: 150

Program Change Request

Date Submitted: 03/11/21 2:23 pm

Viewing: HIST-BA : History BA

File: 157.29

Last approved: 01/30/20 3:27 pm

Last edit: 03/11/21 2:36 pm

Changes proposed by: dewittp

Catalog Pages Using this Program

[242: history-bs](#)

[242: history-bs](#)

[History](#)

Start Term

Fall 2021 2020

Program Code

HIST-BA

Department

History and Political Science

Title

History BA

Program Requirements and Description

In Workflow

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

Approval Path

- 1. 03/10/21 9:56 am  
Michael Bruening (bruening): Rollback to Initiator
- 2. 03/10/21 10:02 am  
Michael Bruening (bruening): Approved for RHISTORY Chair
- 3. 03/10/21 11:36 am  
Marita Tibbetts (tibbettsmg): Rollback to Initiator
- 4. 03/11/21 2:33 pm  
Michael Bruening (bruening): Approved for RHISTORY Chair
- 5. 03/11/21 2:36 pm  
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
- 6. 03/11/21 2:38 pm  
Petra Dewitt (dewittp): Approved for Arts &

- Humanities DSCC  
Chair
7. 03/24/21 9:07 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
8. 04/13/21 10:00 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
9. 04/13/21 10:59 am  
Stephen Raper  
(sraper): Approved  
for Campus  
Curricula  
Committee Chair

History

1. Aug 6, 2014 by  
[Lahne Black \(lahne\)](#)
2. Jul 21, 2015 by  
[pantaleoa](#)
3. Jun 27, 2016 by  
[Petra Dewitt \(dewittp\)](#)
4. Mar 27, 2017 by  
[Petra Dewitt \(dewittp\)](#)
5. Jun 18, 2018 by  
[Shannon Fogg \(sfogg\)](#)
6. Jan 30, 2020 by  
[Petra Dewitt \(dewittp\)](#)

Bachelor of Arts  
History

(In addition to general requirements for bachelor of arts degree.)

<a href="#">HISTORY 1300</a>	American History To 1877	3
<a href="#">HISTORY 1310</a>	American History Since 1877	3
<a href="#">HISTORY 4790</a>	Historiography	3
<a href="#">HISTORY 2791</a>	Historical Research Methods	3
2 American History Electives		6

2 European History Electives	6
2 History Electives	6
Total Credits	30

Note: History majors are also required to complete [HISTORY 1100](#) and [HISTORY 1200](#) as part of the general education requirements for the B.A. In addition, 9 hours of the 30 major hours must be taken at the 3000 or 4000 level.

Note: History majors interested in graduate or professional school should take [HISTORY 4097](#) as independent research under the guidance of a faculty member in a short period (one semester).

Note: History majors must complete an experiential learning requirement. They can meet this requirement by taking [HISTORY 4085](#) or [HISTORY 4097](#) or study abroad, among other options, in consultation with their advisor.

Note: Entering students will normally take [ENGLISH 1120](#) either semester of the first year.

## Secondary Education Emphasis Area

You may earn a B.A. degree in history from Missouri S&T and certification to teach in the schools of Missouri. This program may be completed in four academic years and student teaching is arranged with public schools **anywhere in within 30 miles of the state. Rolla campus.**

Students interested in the certification program should consult with the advisor for history/education majors in the department of history and political science for requirements particular to those interested in this degree. Students should process a change of major form to designate history with an emphasis area of secondary education.

History students must complete 127 credit hours, including requirements for teacher education listed in this catalog. A minimum grade of "C" is required by the department in all history and political science courses counted towards this degree. Students must take the following courses:

Communication Skills: 9 hours		
<a href="#">ENGLISH 1120</a>	Exposition And Argumentation	3
<a href="#">ENGLISH 1160</a>	Writing And Research	3
<a href="#">SP&amp;M S 1185</a>	Principles Of Speech	3
Humanities: 12 hours with at least one course from the first three areas		
Art or Music or Theater Appreciation		
Philosophy		
Literature		
Foreign Language		
<a href="#">ETYM 4306</a>	Introduction To Etymology	3
Social Sciences: 18 hours		
<a href="#">POL SCI 1200</a>	American Government	3
Political Science Elective	Must be 2XXX or above	3
<a href="#">ECON 1100</a>	Principles Of Microeconomics	3
or <a href="#">ECON 1200</a>	Principles Of Macroeconomics	
<a href="#">PSYCH 1101</a>	General Psychology	3
<a href="#">PSYCH 4600</a>	Social Psychology	3
<a href="#">HISTORY 2110</a>	World Regional Geography	3



Natural Sciences: 7 hours = 2 courses and 1 lab		
One course in Physics or Chemistry or Geology and one course in Biology		
One laboratory in any of the above science courses		
Mathematics: 3 hours		
<a href="#">MATH 1120</a>	College Algebra (or higher)	3-5
or <a href="#">MATH 1103</a>	Fundamentals Of Algebra	
or <a href="#">MATH 1140</a>	College Algebra	
Clinical Experience: 16 hours		
<a href="#">EDUC 1104</a>	Teacher Field Experience I	1
<a href="#">EDUC 1164</a>	Teacher Field Experience II	2
<b>EDUC 3298</b>	<b>Course EDUC 3298 Not Found</b>	<b>3</b>
<a href="#">EDUC 4299</a>	Student Teaching	12
Professional Requirements: 26 hours		
<a href="#">EDUC 1040</a>	Perspectives In Education	2
<a href="#">EDUC 1174</a>	School Organization and Administration For Teachers	2
<b>EDUC 2310</b>	<b>Education Of The Exceptional Child</b>	<b>3</b>
<a href="#">EDUC 3216</a>	Instructional Literacy in the Content Area	3
<a href="#">EDUC 3280</a>	Instructional Strategies in the Content Area	3
<b>EDUC 3340</b>	<b>Assessment of Student Learning</b>	<b>3</b>
<a href="#">EDUC 4298</a>	Student Teaching Seminar	1
<a href="#">ENGLISH 3170</a>	Teaching And Supervising Reading and Writing	3
<a href="#">PSYCH 2300/EDUC 2102</a>	Educational Psychology	3
<del>PSYCH 4310/EDUC 4310</del>	<del>Psychology Of The Exceptional Child</del>	<del>3</del>
<a href="#">PSYCH 3310</a>	Developmental Psychology	3
History Requirements: 36 hours		
<a href="#">HISTORY 1100</a>	Early Western Civilization	3
<a href="#">HISTORY 1200</a>	Modern Western Civilization	3
<a href="#">HISTORY 1300</a>	American History To 1877	3
<a href="#">HISTORY 1310</a>	American History Since 1877	3
<a href="#">HISTORY 2791</a>	Historical Research Methods	3
<a href="#">HISTORY 4790</a>	Historiography	3
American History Electives		6
European History Electives		6
History Electives		6

#### Justification for request

Updates owing to changes in Education courses and certification program. Removed co-list of Psych 4310 because not co-listed on Educ 2310 CC form. Removed 3001 course to replace with EDUC 3298 (CC form at same meeting).

#### Supporting Documents

## Course Reviewer Comments

**bruening (03/10/21 9:56 am):** Rollback: Remove Psych crosslist for Educ 2310

**tibbettsmg (03/10/21 11:36 am):** Rollback: EC's shouldn't be listed in program requirements. MT

**tibbettsmg (03/11/21 2:36 pm):** Educ 3298 is a new course proposal in workflow. MT

Key: 157

## Program Change Request

Date Submitted: 02/16/21 4:34 pm

Viewing: **MC ENG-BS : Mechanical Engineering BS**

File: 86.46

Last approved: 10/08/20 3:05 pm

Last edit: 02/17/21 8:17 am

Changes proposed by: nisbett

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

Start Term

Fall **2021** ~~2020~~

Program Code

MC ENG-BS

Department

Mechanical & Aerospace Engineering

Title

Mechanical Engineering BS

### Program Requirements and Description

#### In Workflow

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

#### Approval Path

1. 02/16/21 4:48 pm  
David Bayless  
(djbkqf): Approved  
for RMECHENG  
Chair
2. 02/17/21 8:17 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
3. 02/26/21 8:46 am  
Stephen Raper  
(sraper): Approved  
for Engineering  
DSCC Chair
4. 03/24/21 9:08 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:00 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda

6. 04/13/21 10:59 am  
Stephen Raper  
(sraper): Approved  
for Campus  
Curricula  
Committee Chair

## History

1. Feb 24, 2014 by J. Keith Nisbett (nisbett)
2. Aug 6, 2014 by J. Keith Nisbett (nisbett)
3. Jul 21, 2015 by pantaleoa
4. May 3, 2018 by J. Keith Nisbett (nisbett)
5. Jun 14, 2019 by J. Keith Nisbett (nisbett)
6. Mar 3, 2020 by Brittany Parnell (ershenb)
7. Oct 8, 2020 by Crystal Wilson (wilsoncry)

## Bachelor of Science Mechanical Engineering

Entering freshmen desiring to study mechanical engineering will be admitted to the Foundational Engineering and Computing Program. They will, however, be permitted, if they wish, to state a mechanical 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 mechanical 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. An average of at least two grade points per credit hour must also be attained in all courses taken in mechanical engineering.

Each student's program of study must contain a minimum of 21 credit hours of course work in general education as follows:

1. ENGLISH 1120
2. HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SC 1200
3. ECON 1100 or ECON 1200

4. ENGL 1160 or ENGL 3560 or SP&amp;MS 1185

5. A literature elective

6. A humanity or social science elective\*

7. A humanity or social science elective\* that has, as a prerequisite, a humanity or social science course already taken.

\* Humanity and social science electives must be at least 3 credit hours of lecture designation, and also meet the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog.

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

Freshman Year			
First Semester	Credits	Second Semester	Credits
<a href="#">FR ENG 1100</a>	1	<a href="#">ECON 1100</a> or <a href="#">1200</a>	3
<a href="#">CHEM 1310</a> <sup>a</sup>	4	<a href="#">MECH ENG 1720</a>	3
<a href="#">ENGLISH 1120</a>	3	<a href="#">PHYSICS 1135</a> <sup>a</sup>	4
<a href="#">HISTORY 1200</a> , or <a href="#">1300</a> , or <a href="#">1310</a> , or <a href="#">POL SCI 1200</a>	3	<a href="#">MATH 1215</a> <sup>a, b</sup>	4
<a href="#">CHEM 1319</a>	1	Elective-Hum or Soc Sci <sup>f</sup>	3
<a href="#">MATH 1214</a> <sup>a, b</sup>	4		
	16		17
Sophomore Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MATH 2222</a> <sup>a</sup>	4	<a href="#">MECH ENG 2761</a>	3
Programming Elective <sup>a, c</sup>	3	<a href="#">MECH ENG 2519</a> <sup>a</sup>	3
<a href="#">CIV ENG 2200</a> <sup>a</sup>	3	<a href="#">MECH ENG 2360</a> <sup>a</sup>	3
<a href="#">PHYSICS 2135</a> <sup>a</sup>	4	<a href="#">MATH 3304</a> <sup>a</sup>	3
<a href="#">MECH ENG 2653</a>	3	<a href="#">MET ENG 2110</a> <sup>a</sup>	3
	17		15
Junior Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MECH ENG 3313</a>	3	<a href="#">MECH ENG 3411</a> <sup>a</sup>	3
<a href="#">MECH ENG 3521</a>	3	<a href="#">MECH ENG 3131</a>	3
<a href="#">ELEC ENG 2800</a>	3	<a href="#">MECH ENG 4840</a>	2
<a href="#">CIV ENG 2210</a> <sup>a</sup>	3	Elective-Communications <sup>d</sup>	3
<a href="#">CIV ENG 2211</a>	1	<a href="#">MECH ENG 3708</a>	3
Elective-Advanced Math/Stat <sup>e</sup>	3	<a href="#">MECH ENG 3525</a>	3
	16		17
Senior Year			

First Semester	Credits	Second Semester	Credits
<a href="#">MECH ENG 4842</a>	2	<a href="#">ENG MGT 1100</a>	1
<a href="#">MECH ENG 4479</a>	3	<a href="#">ENG MGT 1210</a>	2
MECH ENG technical elective <sup>g</sup>	3	<a href="#">MECH ENG 4761</a>	3
Literature elective <sup>f</sup>	3	<a href="#">MECH ENG 4480</a>	1
Technical elective <sup>h</sup>	3	MECH ENG 5000-level technical elective <sup>g</sup>	3
Elective-Advanced Hum or Soc Sci <sup>f</sup>	3	Breadth elective <sup>i</sup>	3
	17		13
Total Credits: 128			

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

a	A grade of "C" or better is required in <a href="#">CHEM 1310</a> , <a href="#">MATH 1214</a> , <a href="#">MATH 1215</a> , <a href="#">MATH 2222</a> , <a href="#">MATH 3304</a> , <a href="#">PHYSICS 1135</a> , <a href="#">PHYSICS 2135</a> , programming elective, <a href="#">MET ENG 2110</a> , <a href="#">CIV ENG 2200</a> , <a href="#">CIV ENG 2210</a> , <a href="#">MECH ENG 2519</a> , <a href="#">MECH ENG 2360</a> , and <a href="#">MECH ENG 3411</a> , both as prerequisite for follow-up courses in the curriculum and for graduation.
b	<a href="#">MATH 1208</a> and <a href="#">MATH 1221</a> may be substituted for <a href="#">MATH 1214</a> and <a href="#">MATH 1215</a> , respectively.
c	The programming elective consists of a lecture and lab combination, and may be selected from <a href="#">COMP SCI 1970/COMP SCI 1980</a> , <a href="#">COMP SCI 1971/COMP SCI 1981</a> , or <a href="#">COMP SCI 1972/COMP SCI 1982</a> , or <a href="#">COMP SCI 1570/COMP SCI 1580</a> . Note that <a href="#">COMP SCI 1570/COMP SCI 1580</a> requires one more credit hour than the other options.
d	This course must be selected from the following: <a href="#">ENGLISH 1160</a> , <a href="#">ENGLISH 3560</a> or <a href="#">SP&amp;M S 1185</a> , or the complete four course sequence in Advanced ROTC ( <a href="#">MIL ARMY 3250</a> , <a href="#">MIL ARMY 3500</a> , <a href="#">MIL ARMY 4250</a> , and <a href="#">MIL ARMY 4500</a> ; or <a href="#">MIL AIR 3110</a> , <a href="#">MIL AIR 3120</a> , <a href="#">MIL AIR 4110</a> and <a href="#">MIL AIR 4120</a> ).
e	This course must be selected from the following: <a href="#">MATH 3108</a> , <a href="#">STAT 3113</a> , <a href="#">STAT 3115</a> or any 5000-level math or stat course approved by the student's advisor.
f	All electives must be approved by the student's advisor. Humanity and social science electives must be at least 3 credit hours of lecture designation, and also meet requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog.
g	Six hours of technical electives, subject to approval by the student's advisor, must be in the department of mechanical and aerospace engineering. At least three of these technical elective hours must be at the 5000 level. This elective may not include co-op, special problems, or research credits, such as as 3002, 4000, or 4099. Honors students have special requirements for technical electives.
h	This elective must be a three credit hour course, subject to approval by the student's advisor, from any of the following areas: math, statistics, science, engineering, or computer science. The course must be at the 3000 or higher level, or have a prerequisite that is part of the required mechanical engineering curriculum. Exceptions to the course level may be approved by the student's advisor. The elective may not include co-op, special problems, or research credits, such as 3002, 4000, or 4099.
i	This elective consists of three credit hours, subject to approval by the student's advisor, and may be satisfied by any of the following: (1) A three credit hour course from any of the following areas: math, statistics, science, engineering, computer science, business, or IST. The course must be at the 3000 or higher level, or have a prerequisite that is part of the required mechanical engineering curriculum. Exceptions to the course level may be approved by the student's advisor; (2) Any three credit hour course in the list of approved courses for the global studies minor; or (3) Any combination of three credit hours from co-op (3002), special problems (3000, 4000, or 5000), research (4099), or design team credit (ENG MGT 2011, 2012, or 2013).
j	All mechanical engineering students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree. However, it is the first step toward becoming a registered professional

engineer. This requirement is part of the Missouri S&T assessment process as described in assessment requirements found elsewhere in this catalog.

## Energy Conversion Emphasis Area for Mechanical Engineering

Students desiring to obtain a bachelor of science degree in mechanical engineering with an emphasis area in energy conversion must satisfy all the requirements of the bachelor of science degree in mechanical engineering, with the additional stipulation that four courses must be taken as follows:

a. Two courses from the following list:	6
<a href="#">MECH ENG 5527</a> Combustion Processes	3
or <a href="#">AERO ENG 5527</a> Combustion Processes	
<a href="#">MECH ENG 5533</a> Internal Combustion Engines	3
<a href="#">MECH ENG 5566</a> Solar Energy Technology	3
<a href="#">MECH ENG 5567</a> Heat Pump And Refrigeration Systems	3
<a href="#">MECH ENG 5571</a> Environmental Controls	3
<a href="#">MECH ENG 5575</a> Mechanical Systems For Environmental Control	3
<a href="#">AERO ENG 5169</a> Introduction to Hypersonic Flow	3
<a href="#">AERO ENG 5535</a> Aerospace Propulsion Systems	3
b. One course from the following list:	3
<a href="#">MECH ENG 5519</a> Advanced Thermodynamics	3
or <a href="#">AERO ENG 5519</a> Advanced Thermodynamics	
<a href="#">MECH ENG 5525</a> Intermediate Heat Transfer	3
or <a href="#">AERO ENG 5525</a> Intermediate Heat Transfer	
<a href="#">MECH ENG 5131</a> Intermediate Thermofluid Mechanics	3
or <a href="#">AERO ENG 5131</a> Intermediate Thermofluid Mechanics	
<a href="#">MECH ENG 5139</a> Computational Fluid Dynamics	3
or <a href="#">AERO ENG 5139</a> Computational Fluid Dynamics	
c. One additional course from either list "a" or list "b", or from the following list:	3
<a href="#">ECON 4540</a> Energy Economics	3
<a href="#">ELEC ENG 5150</a> Photovoltaic Systems Engineering	3
<a href="#">ENV ENG 5660</a> Introduction To Air Pollution	3
<a href="#">NUC ENG 4257</a> Two-phase Flow in Energy Systems - I	3

**Note:** By using the breadth elective and technical electives to satisfy the above requirements, this emphasis area requires the same total number of credit hours as the BSME degree. A change of major form should be submitted to designate the energy conversion emphasis area.

## Manufacturing Processes Emphasis Area for Mechanical Engineering

Students desiring to obtain a bachelor of science in mechanical engineering with an emphasis area in manufacturing processes must satisfy all requirements of the bachelor of science in mechanical engineering with the additional stipulation that four courses must be taken as follows:

a. The following course:		3
<a href="#">MECH ENG 3653</a>	Manufacturing	3
b. One course from the following Manufacturing/Automation courses:		3
<a href="#">MECH ENG 5653</a>	Computer Numerical Control of Manufacturing Processes	3
<a href="#">MECH ENG 5655</a>	Manufacturing Equipment Automation	3
<a href="#">MECH ENG 5449</a>	Robotic Manipulators and Mechanisms	3
<a href="#">MECH ENG 5606</a>	Material Processing By High-Pressure Water Jet	3
c. One course from the following Design courses:		3
<a href="#">MECH ENG 5763</a>	Computer Aided Design: Theory and Practice	3
<a href="#">MECH ENG 5656</a>	Design For Manufacture	3
<a href="#">MECH ENG 5702</a>	Synthesis Of Mechanisms	3
d. One course from the following list:		3
<a href="#">MECH ENG 5708</a>	Rapid Product Design And Optimization	3
<a href="#">MECH ENG 5758</a>	Integrated Product Development	3
e. The Math/Stat elective must be one of the following:		3
<a href="#">STAT 3113</a>	Applied Engineering Statistics	3
<a href="#">STAT 3115</a>	Engineering Statistics	3

A suggested sequence for the junior and senior years is given below. Note that by using the breadth elective and technical electives to satisfy the above requirements, this emphasis area requires the same total number of credit hours as the BSME degree. A change of major form should be submitted to designate the manufacturing processes emphasis area.

Junior Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MECH ENG 3313</a>	3	<a href="#">MECH ENG 3411</a> <sup>a</sup>	3
<a href="#">ELEC ENG 2800</a>	3	<a href="#">MECH ENG 3131</a>	3
<a href="#">MECH ENG 3521</a>	3	<a href="#">MECH ENG 3525</a>	3
<a href="#">CIV ENG 2210</a> <sup>a</sup>	3	<a href="#">MECH ENG 4840</a>	2
<a href="#">CIV ENG 2211</a>	1	<a href="#">MECH ENG 3653</a>	3
<a href="#">STAT 3113</a> or <a href="#">3115</a>	3	Elective-Communications <sup>d</sup>	3
	16		17
Senior Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MECH ENG 4842</a>	2	<a href="#">ENG MGT 1100</a>	1
<a href="#">MECH ENG 4479</a>	3	<a href="#">ENG MGT 1210</a>	2
<a href="#">MECH ENG 3708</a>	3	<a href="#">MECH ENG 4761</a>	3
Manufacturing Technical Elective <sup>f</sup>	3	<a href="#">MECH ENG 4480</a>	1
Manufacturing Technical Elective <sup>f</sup>	3	Manufacturing Technical Elective <sup>f</sup>	3
Elective Literature <sup>e</sup>	3	Electives-Hum or Soc Sci <sup>e</sup>	3
	17		13
Total Credits: 63			



a	A grade of "C" or better is required in <a href="#">CHEM 1310</a> , <a href="#">MATH 1214</a> , <a href="#">MATH 1215</a> , <a href="#">MATH 2222</a> , <a href="#">MATH 3304</a> , <a href="#">PHYSICS 1135</a> , <a href="#">PHYSICS 2135</a> , programming elective, <a href="#">MET ENG 2110</a> , <a href="#">CIV ENG 2200</a> , <a href="#">CIV ENG 2210</a> , <a href="#">MECH ENG 2519</a> , <a href="#">MECH ENG 2360</a> and <a href="#">MECH ENG 3411</a> , both as prerequisite for follow-up courses in the curriculum and for graduation.
b	<a href="#">MATH 1208</a> and <a href="#">MATH 1221</a> may be substituted for <a href="#">MATH 1214</a> and <a href="#">MATH 1215</a> , respectively.
c	The programming elective consists of a lecture and lab combination, and may be selected from <a href="#">COMP SCI 1970/COMP SCI 1980</a> , <a href="#">COMP SCI 1971/COMP SCI 1981</a> , <a href="#">COMP SCI 1972/COMP SCI 1982</a> , or <a href="#">COMP SCI 1570/COMP SCI 1580</a> . Note that <a href="#">COMP SCI 1570/COMP SCI 1580</a> requires one more credit hour than the other options.
d	This course must be selected from the following: <a href="#">ENGLISH 1160</a> , <a href="#">ENGLISH 3560</a> or <a href="#">SP&amp;M S 1185</a> , or the complete four course sequence in Advanced ROTC ( <a href="#">MIL ARMY 3250</a> , <a href="#">MIL ARMY 3500</a> , <a href="#">MIL ARMY 4250</a> , and <a href="#">MIL ARMY 4500</a> ; or <a href="#">MIL AIR 3110</a> , <a href="#">MIL AIR 3120</a> , <a href="#">MIL AIR 4110</a> and <a href="#">MIL AIR 4120</a> ).
e	All electives must be approved by the student's advisor. Humanity and social science electives must be at least 3 credit hours of lecture designation, and also meet requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog.
f	The nine hours of manufacturing technical elective must be selected as follows: One course from the following manufacturing/automation courses: <a href="#">MECH ENG 5653</a> , <a href="#">MECH ENG 5655</a> , <a href="#">MECH ENG 5449</a> , <a href="#">MECH ENG 5606</a> . One of the following design courses: <a href="#">MECH ENG 5763</a> , <a href="#">MECH ENG 5656</a> , <a href="#">MECH ENG 5702</a> . One course from the following list: <a href="#">MECH ENG 5708</a> , <a href="#">MECH ENG 5758</a> .
g	All mechanical engineering students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree, however, it is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process as described in Assessment Requirements found elsewhere in this catalog.

## Mechanical Design and Analysis Emphasis Area

Students desiring to obtain a bachelor of science in mechanical engineering with an emphasis area in mechanical design and analysis must satisfy all requirements of the bachelor of science in mechanical engineering, with the additional stipulation that four courses must be taken as follows:

a. One design course from the following list:		3
<a href="#">MECH ENG 5709</a>	Machine Design II	3
<a href="#">MECH ENG 5702</a>	Synthesis Of Mechanisms	3
<a href="#">MECH ENG 5704</a>	Compliant Mechanism Design	3
<a href="#">MECH ENG 5708</a>	Rapid Product Design And Optimization	3
<a href="#">MECH ENG 5715</a>	Concurrent Engineering	3
<a href="#">MECH ENG 5656</a>	Design For Manufacture	3
<a href="#">MECH ENG 5757</a>	Integrated Product And Process Design	3
<a href="#">MECH ENG 5760</a>	Probabilistic Engineering Design	3
<a href="#">MECH ENG 5763</a>	Computer Aided Design: Theory and Practice	3
<a href="#">MECH ENG 5761</a>	Engineering Design Methodology	3
b. One analysis course from the following list:		3
<a href="#">MECH ENG 5307</a>	Vibrations I	3
<a href="#">MECH ENG 5211</a>	Introduction To Continuum Mechanics	3

<a href="#">MECH ENG 5212</a>	Introduction to Finite Element Analysis	3
<a href="#">MECH ENG 5234</a>	Stability of Engineering Structures	3
<a href="#">MECH ENG 5236</a>	Fracture Mechanics	3
<a href="#">MECH ENG 5313</a>	Intermediate Dynamics Of Mechanical And Aerospace Systems	3
<a href="#">MECH ENG 5222</a>	Introduction To Solid Mechanics	3
<a href="#">MECH ENG 5238</a>	Fatigue Analysis	3
<a href="#">MECH ENG 5449</a>	Robotic Manipulators and Mechanisms	3
<a href="#">MECH ENG 5478</a>	Mechatronics	3
c. Two additional courses from either of the previous lists.		6

Note that by using the breadth elective and technical electives to satisfy the above requirements, this emphasis area requires the same total number of credit hours as the BSME degree. A change of major form should be submitted to designate the mechanical design and analysis emphasis area.

## Systems Integration Emphasis Area

The Systems Integration emphasis area is required and available only for students pursuing a bachelor of science in mechanical engineering in the cooperative program delivered at Missouri State University. This emphasis area includes all requirements of the bachelor of science in mechanical engineering, except for the substitutions stipulated below.

The following requirements in the mechanical engineering curriculum are removed (16 credit hours):		
<a href="#">ELEC ENG 2800</a>	Electrical Circuits	3
<a href="#">ENG MGT 1100</a>	Practical Concepts for Technical Managers	1
Elective-Advanced Math/Stat		3
MECH ENG 5000-level technical elective		3
Technical elective		3
Breadth elective		3
The following requirements are added (16 credit hours):		
<a href="#">ELEC ENG 2100</a>	Circuits I	3
<a href="#">ELEC ENG 2101</a>	Circuit Analysis Laboratory I	1
<a href="#">ELEC ENG 2120</a>	Circuits II	3
<a href="#">ENG MGT 3320</a>	Introduction to Project Management	3
Systems Integration technical elective. One of the following:		3
<a href="#">MECH ENG 5307</a>	Vibrations I	3
<a href="#">MECH ENG 5478</a>	Mechatronics	3
<a href="#">MECH ENG 5481</a>	Mechanical And Aerospace Control Systems	3
<a href="#">MECH ENG 5533</a>	Internal Combustion Engines	3
<a href="#">MECH ENG 5571</a>	Environmental Controls	3
<a href="#">MECH ENG 5575</a>	Mechanical Systems For Environmental Control	3
<a href="#">MECH ENG 5656</a>	Design For Manufacture	3
<a href="#">MECH ENG 5704</a>	Compliant Mechanism Design	3
<a href="#">MECH ENG 5708</a>	Rapid Product Design And Optimization	3

<a href="#">MECH ENG 5709</a>	Machine Design II	3
<a href="#">MECH ENG 5715</a>	Concurrent Engineering	3
<a href="#">MECH ENG 5757</a>	Integrated Product And Process Design	3
<a href="#">MECH ENG 5763</a>	Computer Aided Design: Theory and Practice	3
One of the following:		
<a href="#">STAT 3113</a>	Applied Engineering Statistics	3
<a href="#">STAT 3115</a>	Engineering Statistics	3
<a href="#">STAT 3117</a>	Introduction To Probability And Statistics	3
<del>COMP SCI 3200</del>	<del>Introduction To Numerical Methods</del>	<del>3</del>

All of the substitutions for this emphasis area appear in the junior and senior years. A suggested sequence for the junior and senior years is given below.

Junior Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MECH ENG 3313</a>	3	<a href="#">MECH ENG 3411</a> <sup>a</sup>	3
<a href="#">MECH ENG 3521</a>	3	<a href="#">MECH ENG 3131</a>	3
<a href="#">ELEC ENG 2100</a>	3	<a href="#">MECH ENG 3525</a>	3
<a href="#">ELEC ENG 2101</a>	1	<a href="#">MECH ENG 3708</a>	3
<a href="#">CIV ENG 2210</a> <sup>a</sup>	3	<a href="#">MECH ENG 4840</a>	2
<a href="#">CIV ENG 2211</a>	1	<a href="#">ELEC ENG 2120</a>	3
<a href="#">STAT 3113</a> , or <a href="#">3115</a> , or <a href="#">3117</a>	3		
	17		17
Senior Year			
First Semester	Credits	Second Semester	Credits
<a href="#">MECH ENG 4842</a>	2	<a href="#">MECH ENG 4761</a>	3
<a href="#">MECH ENG 4479</a>	3	Systems Integration technical elective <sup>g</sup>	3
<a href="#">MECH ENG 4480</a>	1	Literature elective <sup>e</sup>	3
MECH ENG technical elective <sup>f</sup>	3	Elective - Advanced Hum or Soc Sci <sup>e</sup>	3
Elective - Communications <sup>d</sup>	3	<a href="#">ENG MGT 3320</a>	3
<a href="#">ENG MGT 1210</a>	2		
	14		15
Total Credits: 63			

a A grade of "C" or better is required in [CHEM 1310](#), [MATH 1214](#), [MATH 1215](#), [MATH 2222](#), [MATH 3304](#), [PHYSICS 1135](#), [PHYSICS 2135](#), programming elective, [MET ENG 2110](#), [CIV ENG 2200](#), [CIV ENG 2210](#), [MECH ENG 2519](#), [MECH ENG 2360](#) and [MECH ENG 3411](#), both as prerequisite for follow-up courses in the curriculum and for graduation.

b [MATH 1208](#) and [MATH 1221](#) may be substituted for [MATH 1214](#) and [MATH 1215](#), respectively.

c The programming elective consists of a lecture and lab combination, and may be selected from [COMP SCI 1970/COMP SCI 1980](#), [COMP SCI 1971/COMP SCI 1981](#), or [COMP SCI 1972/COMP SCI 1982](#), or [COMP SCI 1570/COMP SCI 1580](#). Note that [COMP SCI 1570/COMP SCI 1580](#) requires one more credit hour than the other options.

d This course must be selected from the following: [ENGLISH 1160](#), [ENGLISH 3560](#) or [SP&M S 1185](#), or the complete four course

sequence 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](#)).

- e All electives must be approved by the student's advisor.  
Humanity and Social Science electives must be at least 3 credit hours of lecture designation, and also meet requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog.
- f The mechanical engineering technical elective is subject to approval by the student's advisor, and must be in the department of mechanical and aerospace engineering. This elective may not include co-op, special problems, or research credits, such as 3002, 4000, or 4099. Honors students have special requirements for technical electives.
- g The systems integration technical elective must be selected from the following list: MECH ENG 5307, 5478, 5481, 5533, 5571, 5575, 5656, 5704, 5708, 5709, 5715, 5757, 5763.
- h All mechanical engineering students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree. However, it is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process as described in assessment requirements found elsewhere in this catalog.

#### Justification for request

We are removing the CompSci option from the math/stat/CompSci elective, to make it a math/stat elective. This is so it qualifies for ABET accounting as 3 credit hours of math.

#### Supporting Documents

#### Course Reviewer Comments

**tibbettsmg (02/17/21 8:17 am):** proposed elective changes don't affect the scope of program and don't require MDHE approval. MT

Key: 86

## Program Change Request

Date Submitted: 03/11/21 9:27 am

Viewing: **PSYCH-BA : Psychology BA**

File: 192.43

Last approved: 03/04/21 10:02 am

Last edit: 03/11/21 9:27 am

Changes proposed by: burnsde

Catalog Pages Using this Program

[Psychology\\_](#)

Start Term

Fall 2021

Program Code

PSYCH-BA

Department

Psychological Science

Title

Psychology BA

## Program Requirements and Description

### In Workflow

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

### Approval Path

1. 03/10/21 3:57 pm  
Susan Murray (murray): Approved for RPSYCHOL Chair
2. 03/10/21 4:11 pm  
Marita Tibbetts (tibbettsmg): Rollback to Initiator
3. 03/14/21 7:39 pm  
Susan Murray (murray): Approved for RPSYCHOL Chair
4. 03/15/21 10:32 am  
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
5. 03/15/21 10:37 am  
Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
6. 03/24/21 9:21 am  
Marita Tibbetts

(tibbettsmg):

Approved for

Pending CCC

Agenda post

7. 04/13/21 10:00 am

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Meeting Agenda

8. 04/13/21 11:00 am

Stephen Raper

(sraper): Approved

for Campus

Curricula

Committee Chair

## History

1. Aug 4, 2014 by  
nstone2. Mar 20, 2015 by  
nstone3. Jun 19, 2015 by  
nstone4. Jul 21, 2015 by  
pantaleoa5. Jun 28, 2017 by  
Nathan Weidner  
(weidnern)6. Jun 14, 2019 by  
Susan Murray  
(murray)7. Jul 1, 2020 by  
Devin Burns  
(burnsde)8. Mar 4, 2021 by  
Devin Burns  
(burnsde)

## Bachelor of Arts Psychology

A minimum of 120 credit hours is required for a bachelor of arts degree in psychology and an average of at least two grade points per credit hour must be obtained. The psychology B.A. curriculum requires 6 hours of English Composition, 14 hours of math and science, 12 semester hours in humanities, 12 semester hours is required in social sciences, 11-16 hours of foreign language and a minimum of 35 hours are required in psychology. Up to 12 credit hours of advanced ROTC may be credited toward the degree. Specific requirements for the bachelor of arts degree are outlined in the sample program listed below.

1. [ENGLISH 1120](#) and one additional three hour composition course (6 hours).
2. Western civilization ([HISTORY 1100](#) and [HISTORY 1200](#)) (6 hours).

3. Foreign languages for at least 3 semesters of basic study in French, German, Russian, Spanish or an approved substitute; or one year of basic study in a foreign language in either French, German, Russian, Spanish, or an approved substitute, and a humanities or social sciences course taught in a foreign country and employing the language of that country; or one year of basic study in each of two of the foreign languages of French, German, Russian or Spanish or an approved substitute (11-16 hours).
4. Sciences. At least one course taken in biological (biological sciences) and physical (chemistry, geology and geophysics, physics) sciences. A laboratory course is required (and a lab offered in engineering also may count at the discretion of the student's major advisor) toward the total requirement. Stat 1115 is required, and an additional elective in Science or Math (14 hours).
5. Humanities and fine arts. Courses used to satisfy this requirement must include one course in each of the three areas of literature (English or American), philosophy, and fine arts (art, music or theater), but not to include studio and performance offerings (12 hours).
6. Social Sciences. At least two of the following social science areas are to be included: economics, political science, or history (6 hours).

7.	Psychology Courses (35 hours)		
	Required:*		
	General Skills Courses:		
	<a href="#">PSYCH 1100</a>	Introduction to Psychology	1
	<a href="#">PSYCH 1101</a>	General Psychology	3
	<a href="#">PSYCH 2200</a>	Research Methods	4
	Content Courses:		
	<a href="#">PSYCH 3310</a>	Developmental Psychology	3
	<a href="#">PSYCH 4400</a>	Cognitive Psychology	3
	<a href="#">PSYCH 4501</a>	Abnormal Psychology	3
	<a href="#">PSYCH 4600</a>	Social Psychology	3
	And one of the following 2 courses:		
	<a href="#">PSYCH 4410</a>	Neuroscience	3
	<a href="#">PSYCH 4411</a>	Sensation and Perception	3
	Capstone Course:		
	Select three credit hours from the Capstone courses:		
	<a href="#">PSYCH 4010</a>	Seminar	0-6
	<a href="#">PSYCH 4099</a>	Undergraduate Research	0-6
	<a href="#">PSYCH 4200</a>	Tests and Measurements	3
	<a href="#">PSYCH 4590</a>	Health Psychology	3
	<a href="#">PSYCH 4994</a>	Psychology in Media	3
	<a href="#">PSYCH 4992</a>	Cross-Cultural Psychology	3
	<a href="#">PSYCH 4993</a>	Psychology of Gender	3
	<a href="#">PSYCH 4990</a>	Internship	0-6
	*These required courses total 26 hours.		
	Elective Courses:		
	Select an additional 9 hours of psychology electives to complete the 35 hour degree requirement.		

8. Major-field requirements: A cumulative grade point average of 2.0 must be earned in all course work taken in the major field. Upper-class (3000-4000-level) courses completed with grades of "D" may not be included in the course work for the major field

without the approval of the chair of the department. At least nine hours of upper-class work in the major field must be completed in residence at Missouri S&T.

9. Minor: A minor will be selected from any discipline other than the major with the approval of the student's advisor. A total of at least 15 hours is required for the minor, but may include courses which also satisfy other requirements. At least nine hours must be beyond the introductory level. A cumulative grade point average of 2.0 must be earned in all course work required in the minor field. At least six hours of work in the minor field must be completed in residence at Missouri S&T.
10. Basic ROTC may be elected in the freshman and sophomore years, but is not creditable toward a degree. Up to 12 credit hours of advanced ROTC may be credited toward a degree.
11. Elective Credits: In consultation with his/her advisor, each student will elect sufficient additional courses to complete a minimum of 120 credit hours.

## Emphasis Areas

Note: The following areas identify courses from which a student may opt to develop an emphasis area. It is not required that students obtain an emphasis specialty within psychology. At least one class for each emphasis area is already required for all majors, so the remaining three may be taken as the additional 9 hours of required psychology electives. In this way, getting an emphasis requires no additional courses, just less flexibility in which courses you take.

Industrial/Organizational Psychology		
<a href="#">PSYCH 4600</a>	Social Psychology	3
<a href="#">PSYCH 4700</a>	Industrial Psychology	3
<a href="#">PSYCH 4602</a>	Organizational Psychology	3
And 1 of the following 4:		
<a href="#">PSYCH 4601</a>	Group Dynamics	3
<a href="#">PSYCH 4610</a>	Psychology of Leadership in Organizations	3
<a href="#">PSYCH 4500</a>	Personality Theory	3
<a href="#">PSYCH 4200</a>	Tests and Measurements	3
Health Psychology		
<a href="#">PSYCH 4501</a>	Abnormal Psychology	3
And 3 of the following 4:		
<a href="#">PSYCH 4510</a>	Clinical Psychology	3
<a href="#">PSYCH 4990</a>	Internship	0-6
<a href="#">PSYCH 4590</a>	Health Psychology	3
<a href="#">PSYCH 3501</a>	Drugs and Behavior	3
Cognition and Neuroscience		
<a href="#">PSYCH 4400</a>	Cognitive Psychology	3
And 3 of the following 4:		
<a href="#">PSYCH 4411</a>	Sensation and Perception	3
<a href="#">PSYCH 3400</a>	Theories Of Learning	3
<a href="#">PSYCH 4410</a>	Neuroscience	3
<a href="#">PSYCH 3501</a>	Drugs and Behavior	3
Human Factors		
<a href="#">PSYCH 4400</a>	Cognitive Psychology	3
<a href="#">PSYCH 4710</a>	Human Factors	3



<a href="#">PSYCH 4720</a>	Psychology of Social Technology	3
And 1 of the following 3:		
<a href="#">PSYCH 4411</a>	Sensation and Perception	3
<a href="#">PSYCH 4700</a>	Industrial Psychology	3
<a href="#">PSYCH 4602</a>	Organizational Psychology	3
Diversity and Inclusion		
<a href="#">PSYCH 4600</a>	Social Psychology	3
And 3 of the following 4:		
<a href="#">PSYCH 4993</a>	Psychology of Gender	3
<a href="#">PSYCH 4500</a>	Personality Theory	3
<a href="#">PSYCH 4992</a>	Cross-Cultural Psychology	3
<a href="#">PSYCH 4310</a>	Psychology Of The Exceptional Child	3

## Bachelor of Arts Psychology (Secondary Education Emphasis Area)

You may earn a B.A. degree in psychology from Missouri S&T and certification to teach at the secondary level in the schools of Missouri with the secondary education emphasis area **program**.

~~program.~~

**In addition to maintaining a 3.0 content and professional requirement GPA, students must pass the appropriate content assessment to be eligible for student teaching. Missouri S&T allows students to choose their student teaching placement, if the district agrees and a qualified cooperating teacher is available. This program is approved by the Missouri Department of Elementary and Secondary Education for initial teacher certification. Students intending to teach in other states are responsible for investigating the reciprocity agreement of that state agency.**

~~This program can be completed in four academic years and student teaching is arranged with public schools within 30 miles of the Rolla campus. Students interested in this emphasis area should consult with the advisor for the secondary education emphasis area in the department of psychological science. In order to successfully complete this emphasis area, students must have at least 22 on the ACT, maintain a cumulative GPA of at least 2.5, and attain at least a 2.5 GPA in psychology courses taken. Current Missouri S&T or transfer students who wish to pursue this emphasis area must meet both of these GPA requirements to be accepted into the program. Students must also meet all requirements listed under the teacher education program in this catalog. Students who do not meet all the teacher certification requirements will not be eligible for the secondary education emphasis area, even if they have completed all coursework. A degree with this emphasis area requires~~ **121** ~~125~~ credit hours. The required courses are provided below.

Communications Skills: 6 semester hours		
<a href="#">ENGLISH 1120</a>	Exposition And Argumentation	3
<a href="#">ENGLISH 1160</a>	Writing And Research	3
Humanities: 12 semester hours		
Art, Music, or Theatre course		3
Philosophy course		3
Literature course		3
One additional humanities from the above course groups, Foreign Language, or Etymology		3
Social Sciences: 21 semester hours		
<a href="#">HISTORY 1300</a>	American History To 1877	3

<a href="#">HISTORY 1310</a>	American History Since 1877	3
<a href="#">POL SCI 1200</a>	American Government	3
<a href="#">POL SCI 3211</a>	American Political Parties	3
or <a href="#">POL SCI 3300</a>	Principles Of Public Policy	
or <a href="#">POL SCI 3760</a>	The American Presidency	
or <a href="#">POL SCI 3763</a>	Contemporary Political Thought	
<a href="#">PSYCH 1101</a>	General Psychology	3
<a href="#">ECON 1100</a>	Principles Of Microeconomics	3
or <a href="#">ECON 1200</a>	Principles Of Macroeconomics	
Geography		3
Natural Science/Mathematics: 12 semester hours		
One course in Physics, Chemistry or Geology		3
Mathematics 1120, 1103, 1140+		3
<a href="#">STAT 1115</a>	Statistics For The Social Sciences I	3
<a href="#">BIO SCI 1113</a>	General Biology	3
Professional Requirements: 23 semester hours		
<a href="#">EDUC 1040</a>	Perspectives In Education	2
<a href="#">EDUC 1174</a>	School Organization and Administration For Teachers	2
<a href="#">EDUC 2251</a>	Historical Foundation Of American Education	3
<a href="#">EDUC 3216</a>	Instructional Literacy in the Content Area	3
<a href="#">EDUC 3280</a>	Instructional Strategies in the Content Area	3
<a href="#">EDUC 4298</a>	Student Teaching Seminar	1
<a href="#">PSYCH 2300</a>	Educational Psychology	3
<a href="#">PSYCH 3311</a>	Psychological & Educational Development Of The Adolescent	3
<a href="#">PSYCH 4310</a>	Psychology Of The Exceptional Child	3
Clinical Experience: 15 semester hours		
<a href="#">EDUC 1104</a>	Teacher Field Experience I	1
<a href="#">EDUC 1164</a>	Teacher Field Experience II	2
<a href="#">EDUC 4299</a>	Student Teaching	12
Psychology Degree Requirements: 17 semester hours		
<a href="#">PSYCH 1100</a>	Introduction to Psychology	1
<a href="#">PSYCH 2200</a>	Research Methods	4
<a href="#">PSYCH 3400</a>	Theories Of Learning	3
<a href="#">PSYCH 3310</a>	Developmental Psychology	3
<a href="#">PSYCH 4501</a>	Abnormal Psychology	3
or <a href="#">PSYCH 4500</a>	Personality Theory	
<a href="#">PSYCH 4600</a>	Social Psychology	3
Certification: 15 semester hours		
6 hours of American History from the following:		

<a href="#">HISTORY 3320</a>	Colonial America
<a href="#">HISTORY 3325</a>	Revolutionary America, 1754-1789
<a href="#">HISTORY 3340</a>	Age Of Jefferson And Jackson
<a href="#">HISTORY 3345</a>	Civil War And Reconstruction
<a href="#">HISTORY 3360</a>	Recent United States History
<a href="#">HISTORY 3425</a>	History Of The Old South
<a href="#">HISTORY 3426</a>	History Of The Modern South
<a href="#">HISTORY 3480</a>	History Of Baseball
<a href="#">HISTORY 3440</a>	20th Century Americans In Combat
<a href="#">HISTORY 3442</a>	The United States in Vietnam
<a href="#">HISTORY 3761</a>	U.S. Diplomatic History to World War II
<a href="#">HISTORY 4435</a>	History of the American West
9 hours of World History from the following:	
<a href="#">HISTORY 1100</a>	Early Western Civilization
<a href="#">HISTORY 1200</a>	Modern Western Civilization
<a href="#">HISTORY 2220</a>	Making Of Modern Britain
<a href="#">HISTORY 2222</a>	The Making Of Modern France
<a href="#">HISTORY 2224</a>	Making Of Modern Russia
<a href="#">HISTORY 3130</a>	Medieval History I
<a href="#">HISTORY 3135</a>	Medieval History II
<a href="#">HISTORY 3140</a>	History Of Renaissance Thought
<a href="#">HISTORY 3230</a>	Europe In The Age Of The French Revolution And Napoleon
<a href="#">HISTORY 3235</a>	Foundations Of Contemporary Europe 1815-1914
<a href="#">HISTORY 3240</a>	Contemporary Europe
<a href="#">HISTORY 3660</a>	Modern East Asia

#### Justification for request

Made changes requested by Dr. Kania-Gosche in Education, and adjusted education credit hours.

#### Supporting Documents

[MS&T-PC November 2020.pdf](#)

#### Course Reviewer Comments

**tibbettsmg (03/10/21 4:11 pm):** Rollback: credit hours need updated to reflect accurately. MT

Key: 192

## Program Change Request

Date Submitted: 03/11/21 9:28 am

Viewing: **PSYCH-BS : Psychology BS**

File: 193.44

Last approved: 03/04/21 10:02 am

Last edit: 03/11/21 9:28 am

Changes proposed by: burnsde

Catalog Pages Using this Program

[Psychology\\_](#)

Start Term

Fall 2021

Program Code

PSYCH-BS

Department

Psychological Science

Title

Psychology BS

## Program Requirements and Description

### In Workflow

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

### Approval Path

1. 03/10/21 3:57 pm  
Susan Murray  
(murray): Approved  
for RPSYCHOL  
Chair
2. 03/10/21 4:14 pm  
Marita Tibbetts  
(tibbettsmg):  
Rollback to Initiator
3. 03/14/21 7:40 pm  
Susan Murray  
(murray): Approved  
for RPSYCHOL  
Chair
4. 03/15/21 10:33 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
5. 03/15/21 10:38 am  
Cecil Eng Huang  
Chua (cchua):  
Approved for Social  
Sciences DSCC  
Chair
6. 03/24/21 9:21 am  
Marita Tibbetts

(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post  
7. 04/13/21 10:00 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda  
8. 04/13/21 11:00 am  
Stephen Raper  
(sraper): Approved  
for Campus  
Curricula  
Committee Chair

History

- 1. May 6, 2014 by nstone
- 2. Jul 8, 2014 by pantaleoa
- 3. Jul 8, 2014 by pantaleoa
- 4. Mar 20, 2015 by nstone
- 5. Jun 19, 2015 by nstone
- 6. Jul 21, 2015 by pantaleoa
- 7. Jun 28, 2017 by Nathan Weidner (weidnern)
- 8. Jun 14, 2019 by Susan Murray (murray)
- 9. Jul 1, 2020 by Devin Burns (burnsde)
- 10. Mar 4, 2021 by Devin Burns (burnsde)

Bachelor of Science  
Psychology

A minimum of 120 credit hours is required for a bachelor of science degree in psychology and a cumulative grade point average of 2.0 must be obtained. These requirements for the B.S. degree are in addition to credit received for basic ROTC.

The psychology bachelor of science curriculum requires six hours of English composition; 20 hours of math, science and computer science; twelve semester hours in the humanities; and twelve semester hours in the social sciences. Specific requirements for the bachelor degree are outlined in the sample program listed below.

1. [ENGLISH 1120](#) and [ENGLISH 1160](#) (entering students will normally take [ENGLISH 1120](#) either semester of the first year.) (6 hours)
2. A total of 20 hours in biological, physical, (chemistry, geology and geophysics, and physics), and mathematical (mathematics/statistics and computer science or information science & technology) sciences, to include at least one course taken in the biological and one in the physical sciences. Of the biological and physical science offerings, at least one must be a laboratory course. Stat 1115 is required. Engineering courses may, at the discretion of the student's major advisor, also count toward this total requirement. (20 hours)
3. 12 hours in humanities and fine arts (literature, philosophy, art, music, or theater). Foreign language courses may count toward fulfilling this requirement. Courses used to satisfy this requirement must be taken in at least two humanities areas. (12 hours)
4. 12 hours in at least two social sciences fields outside the major area (economics or history or political science). A course in Modern Western Civilization ([HISTORY 1200](#)), American History To 1877 ([HISTORY 1300](#)) or American History Since 1877 ([HISTORY 1310](#)), or American Government ([POL SCI 1200](#)) must be taken to satisfy the requirement of the state of Missouri (the "Williams Law"), and this course may count toward fulfilling the social sciences requirement. (12 hours)
5. Minor: A minor will be selected from any discipline other than the major with the approval of the student's advisor. A total of at least 15 hours is required for the minor, but may include courses which also satisfy other requirements. At least nine hours must be beyond the introductory level.
6. Basic ROTC may be elected in the freshman and sophomore years, but is not creditable toward a degree. Six credit hours of advanced ROTC may be credited toward a degree.
7. Elective Credits: In consultation with his/her advisor, each student will elect sufficient additional courses to complete a minimum of 120 credit hours which may include [MATH 1160](#) and one of [MATH 1120](#) or [MATH 1140](#) .

8.	Psychology Courses (35 hours)		
	Required:*		
	General Skills Courses:		
	<a href="#">PSYCH 1100</a>	Introduction to Psychology	1
	<a href="#">PSYCH 1101</a>	General Psychology	3
	<a href="#">PSYCH 2200</a>	Research Methods	4
	Content Courses:		
	<a href="#">PSYCH 3310</a>	Developmental Psychology	3
	<a href="#">PSYCH 4400</a>	Cognitive Psychology	3
	<a href="#">PSYCH 4501</a>	Abnormal Psychology	3
	<a href="#">PSYCH 4600</a>	Social Psychology	3
	And one of the following 2 courses:		
	<a href="#">PSYCH 4410</a>	Neuroscience	3
	<a href="#">PSYCH 4411</a>	Sensation and Perception	3
	Capstone Course:		
	Select three credit hours from the following Capstone courses:		
	<a href="#">PSYCH 4010</a>	Seminar	0-6
	<a href="#">PSYCH 4099</a>	Undergraduate Research	0-6
	<a href="#">PSYCH 4200</a>	Tests and Measurements	3
	<a href="#">PSYCH 4590</a>	Health Psychology	3
	<a href="#">PSYCH 4994</a>	Psychology in Media	3
	<a href="#">PSYCH 4992</a>	Cross-Cultural Psychology	3

<a href="#">PSYCH 4993</a>	Psychology of Gender	3
<a href="#">PSYCH 4990</a>	Internship	0-6
*These required courses total 26 hours.		
Elective Courses:		
Select an additional 9 hours of psychology electives to complete the 35 hour degree requirement.		

9. A cumulative grade point average of 2.0 must be earned in all course work taken in the major field. Upper class (3000-level and above) courses completed with grades of "D" may not be included in the course work for the major field without the approval of the advisor and the chair of the department concerned.

## Emphasis Areas

Note: The following areas identify courses from which a student may opt to develop an emphasis area. It is not required that students obtain an emphasis specialty within psychology. **At least one class for each emphasis area is already required for all majors, so the remaining three may be taken as the additional 9 hours of required psychology electives. In this way, getting an emphasis requires no additional courses, just less flexibility in which courses you take.**

Industrial/Organizational Psychology		
<a href="#">PSYCH 4600</a>	Social Psychology	3
<a href="#">PSYCH 4700</a>	Industrial Psychology	3
<a href="#">PSYCH 4602</a>	Organizational Psychology	3
And 1 of the following 4:		
<a href="#">PSYCH 4601</a>	Group Dynamics	3
<a href="#">PSYCH 4500</a>	Personality Theory	3
<a href="#">PSYCH 4610</a>	Psychology of Leadership in Organizations	3
<a href="#">PSYCH 4200</a>	Tests and Measurements	3
Health Psychology		
<a href="#">PSYCH 4501</a>	Abnormal Psychology	3
And 3 of the following 4:		
<a href="#">PSYCH 4510</a>	Clinical Psychology	3
<a href="#">PSYCH 3501</a>	Drugs and Behavior	3
<a href="#">PSYCH 4590</a>	Health Psychology	3
<a href="#">PSYCH 4990</a>	Internship	0-6
Cognition and Neuroscience		
<a href="#">PSYCH 4400</a>	Cognitive Psychology	3
<a href="#">PSYCH 4410</a>	Neuroscience	3
<a href="#">PSYCH 4411</a>	Sensation and Perception	3
And 1 of the following 2:		
<a href="#">PSYCH 3400</a>	Theories Of Learning	3
<a href="#">PSYCH 3501</a>	Drugs and Behavior	3
Human Factors		
<a href="#">PSYCH 4400</a>	Cognitive Psychology	3
<a href="#">PSYCH 4710</a>	Human Factors	3

<a href="#">PSYCH 4720</a>	Psychology of Social Technology	3
And 1 of the following 3:		
<a href="#">PSYCH 4700</a>	Industrial Psychology	3
<a href="#">PSYCH 4602</a>	Organizational Psychology	3
<a href="#">PSYCH 4411</a>	Sensation and Perception	3
Diversity and Inclusion		
<a href="#">PSYCH 4600</a>	Social Psychology	3
And 3 of the following 4:		
<a href="#">PSYCH 4993</a>	Psychology of Gender	3
<a href="#">PSYCH 4992</a>	Cross-Cultural Psychology	3
<a href="#">PSYCH 4310</a>	Psychology Of The Exceptional Child	3
<a href="#">PSYCH 4500</a>	Personality Theory	3

## Bachelor of Science Psychology (Secondary Education Emphasis Area)

You may earn a B.S. degree in psychology from Missouri S&T and certification to teach at the secondary level in the schools of Missouri with the secondary education emphasis area **program**.

~~program.~~

**In addition to maintaining a 3.0 content and professional requirement GPA, students must pass the appropriate content assessment to be eligible for student teaching. Missouri S&T allows students to choose their student teaching placement, if the district agrees and a qualified cooperating teacher is available. This program is approved by the Missouri Department of Elementary and Secondary Education for initial teacher certification. Students intending to teach in other states are responsible for investigating the reciprocity agreement of that state agency.**

~~This program can be completed in four academic years and student teaching is arranged with public schools within 30 miles of the Rolla campus. Students interested in this emphasis area should consult with the advisor for the secondary education emphasis area in the department of psychological science. In order to successfully complete this emphasis area, students must have at least 22 on the ACT, maintain a cumulative GPA of at least 2.5, and attain at least a 2.5 GPA in psychology courses taken. Current Missouri S&T or transfer students who wish to pursue this emphasis area must meet both of these GPA requirements to be accepted into the program. Students must also meet all requirements listed under the teacher education program in this catalog. Students who do not meet all the teacher certification requirements will not be eligible for the secondary education emphasis area, even if they have completed all coursework. A degree with in this emphasis area requires 121 125 credit hours. The required courses are provided below.~~

Communications Skills: 3 semester hours		
<a href="#">ENGLISH 1120</a>	Exposition And Argumentation	3
Humanities: 12 semester hours		
Art, Music, or Theatre course		3
Philosophy course		3
Literature course		3
One additional humanities from the above course groups, Foreign Language, or Etymology		3-4
Social Sciences: 21 semester hours		
<a href="#">HISTORY 1300</a>	American History To 1877	3
<a href="#">HISTORY 1310</a>	American History Since 1877	3



<a href="#">POL SCI 1200</a>	American Government	3
<a href="#">POL SCI 3211</a>	American Political Parties	3
or <a href="#">POL SCI 3300</a>	Principles Of Public Policy	
or <a href="#">POL SCI 3760</a>	The American Presidency	
or <a href="#">POL SCI 3763</a>	Contemporary Political Thought	
<a href="#">PSYCH 1101</a>	General Psychology	3
<a href="#">ECON 1100</a>	Principles Of Microeconomics	3
or <a href="#">ECON 1200</a>	Principles Of Macroeconomics	
<a href="#">HISTORY 2110</a>	World Regional Geography	3
Natural Sciences/Mathematics: 15 semester hours		
One course in Physics, Chemistry or Geology		3
Mathematics 1120, 1130, 1140+		3
<a href="#">BIO SCI 1113</a>	General Biology	3
<a href="#">STAT 1115</a>	Statistics For The Social Sciences I	3
3 additional hours of Math &/or Science courses		3
Professional Requirements: 23 semester hours		
<a href="#">EDUC 1040</a>	Perspectives In Education	2
<a href="#">EDUC 1174</a>	School Organization and Administration For Teachers	2
<a href="#">EDUC 2251</a>	Historical Foundation Of American Education	3
<a href="#">EDUC 3216</a>	Instructional Literacy in the Content Area	3
<a href="#">EDUC 3280</a>	Instructional Strategies in the Content Area	3
<a href="#">EDUC 4298</a>	Student Teaching Seminar	1
<a href="#">PSYCH 2300</a>	Educational Psychology	3
<a href="#">PSYCH 3311</a>	Psychological & Educational Development Of The Adolescent	3
<a href="#">PSYCH 4310</a>	Psychology Of The Exceptional Child	3
Clinical Experience: 15 semester hours		
<a href="#">EDUC 1104</a>	Teacher Field Experience I	1
<a href="#">EDUC 1164</a>	Teacher Field Experience II	2
<a href="#">EDUC 4299</a>	Student Teaching	12
Psychology Degree Requirements: 17 semester hours		
<a href="#">PSYCH 1100</a>	Introduction to Psychology	1
<a href="#">PSYCH 2200</a>	Research Methods	4
<a href="#">PSYCH 3400</a>	Theories Of Learning	3
<a href="#">PSYCH 3310</a>	Developmental Psychology	3
<a href="#">PSYCH 4501</a>	Abnormal Psychology	3
or <a href="#">PSYCH 4500</a>	Personality Theory	
<a href="#">PSYCH 4600</a>	Social Psychology	3
Certification: 15 semester hours		
6 hours of American History from the following:		

<a href="#">HISTORY 3320</a>	Colonial America
<a href="#">HISTORY 3325</a>	Revolutionary America, 1754-1789
<a href="#">HISTORY 3340</a>	Age Of Jefferson And Jackson
<a href="#">HISTORY 3345</a>	Civil War And Reconstruction
<a href="#">HISTORY 3360</a>	Recent United States History
<a href="#">HISTORY 3425</a>	History Of The Old South
<a href="#">HISTORY 3426</a>	History Of The Modern South
<a href="#">HISTORY 3480</a>	History Of Baseball
<a href="#">HISTORY 3440</a>	20th Century Americans In Combat
<a href="#">HISTORY 3442</a>	The United States in Vietnam
<a href="#">HISTORY 3761</a>	U.S. Diplomatic History to World War II
<a href="#">HISTORY 4435</a>	History of the American West
9 hours of World History from the following:	
<a href="#">HISTORY 1100</a>	Early Western Civilization
<a href="#">HISTORY 1200</a>	Modern Western Civilization
<a href="#">HISTORY 2220</a>	Making Of Modern Britain
<a href="#">HISTORY 2222</a>	The Making Of Modern France
<a href="#">HISTORY 2224</a>	Making Of Modern Russia
<a href="#">HISTORY 3130</a>	Medieval History I
<a href="#">HISTORY 3135</a>	Medieval History II
<a href="#">HISTORY 3140</a>	History Of Renaissance Thought
<a href="#">HISTORY 3230</a>	Europe In The Age Of The French Revolution And Napoleon
<a href="#">HISTORY 3235</a>	Foundations Of Contemporary Europe 1815-1914
<a href="#">HISTORY 3240</a>	Contemporary Europe
<a href="#">HISTORY 3660</a>	Modern East Asia

Justification for request

Made changes requested by Dr. Kania-Gosche in Education and adjusted education class credit hours.

Supporting Documents

[MS&T-PC November 2020.pdf](#)

Course Reviewer Comments

**tibbettsmg (03/10/21 4:14 pm):** Rollback: credit hours need updated to reflect accurately. MT

Key: 193

Program Change Request

Date Submitted: 02/26/21 8:23 am

Viewing: **PRJ MGT-CT : Project Management CT**

File: 334.1

Last edit: 03/04/21 1:14 pm

Changes proposed by: cornss

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

Start Term

Fall 2021

Program Code

PRJ MGT-CT

Department

ENG MGT

Title

Project Management CT

Program Requirements and Description

In Workflow

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

Approval Path

- 1. 02/26/21 9:28 am  
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
- 2. 03/04/21 1:23 pm  
Stephen Raper (sraper): Approved for Engineering DSCC Chair
- 3. 03/24/21 9:18 am  
Marita Tibbetts (tibbettsmg): Approved for Pending CCC Agenda post
- 4. 04/13/21 10:01 am  
Marita Tibbetts (tibbettsmg): Approved for CCC Meeting Agenda
- 5. 04/13/21 11:00 am  
Stephen Raper (sraper): Approved for Campus Curricula Committee Chair

## Project Management

The project management certificate program aims to equip students with a set of tools that will allow them to achieve Project Management Institute (PMI) standards in the project management area, to successfully manage projects and human resources, and to analyze, evaluate, and improve systems.

The certificate program will consist of **three** ~~four~~ required **courses and the student's choice of one of two finance related courses :** ~~courses:~~

<a href="#">ENG MGT 5320</a>	Project Management
<a href="#">ENG MGT 6322</a>	Case Studies in Project Management
<a href="#">ENG MGT 6323</a>	Global Project Management
<a href="#">ENG MGT 5210</a>	Economic Decision Analysis
or <a href="#">SYS ENG 6103</a>	Systems Life Cycle Costing

Justification for request

Systems Engineering 6103 has some similarity with Engineering Management 5210, but offers insight into complex projects.

Supporting Documents

Course Reviewer Comments

**tibbettsmg (03/04/21 1:14 pm):** re-ordered course list to include a consistent order. MT

Key: 334

Program Change Request

Date Submitted: 03/10/21 4:11 pm

Viewing: **PSYMTRP-CT : Statistical Methods Psych CT**

File: 305.5

Last approved: 09/15/20 2:34 pm

Last edit: 03/10/21 4:22 pm

Changes proposed by: burnsde

Catalog Pages Using this Program  
[Psychology](#)

Start Term

Fall **2021** ~~2020~~

Program Code

PSYMTRP-CT

Department

Psychological Science

Title

Statistical Methods Psych CT

Program Requirements and Description

In Workflow

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

Approval Path

- 1. 03/10/21 4:20 pm  
Susan Murray (murray): Approved for RPSYCHOL Chair
- 2. 03/10/21 4:23 pm  
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
- 3. 03/11/21 8:44 am  
Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
- 4. 03/24/21 9:22 am  
Marita Tibbetts (tibbettsmg): Approved for Pending CCC Agenda post
- 5. 04/13/21 10:01 am  
Marita Tibbetts (tibbettsmg): Approved for CCC Meeting Agenda

6. 04/13/21 11:00 am  
 Stephen Raper  
 (sraper): Approved  
 for Campus  
 Curricula  
 Committee Chair

## History

1. Jun 13, 2019 by  
[Brittany Parnell](#)  
 (ershenb)
2. Jul 1, 2020 by  
[Devin Burns](#)  
 (burnsde)
3. Sep 15, 2020 by  
[Crystal Wilson](#)  
 (wilsoncry)

## Statistical Methods in Psychology

This certificate program is designed to provide formalized education in the area of **statistics as it is applied to the analysis of psychological data. psychometrics. Students will complete a four course sequence of classes designed to develop basic graduate level skills in psychological data analysis. These courses will develop an understanding of basic graduate level statistical concepts including probability, t-tests, ANOVAs, regression, as well as non-parametric tests. Students will engage in projects which include measure development and refinement procedures.**

~~Psychometrics is the field of study concerned with the theory and technique of psychological measurement and includes the measurement of knowledge, abilities, attitudes, and personality traits. The field is primarily concerned with the study of differences between individuals and involves two major research tasks: (1) the construction of instruments and procedures for measurement; and (2) the development and refinement of theoretical approaches to measurement. After being admitted to the program, a student must take two courses from a group of three and an additional two courses from a second group of three.~~ The following two psychology courses will be required:

<a href="#">PSYCH 5201</a>	Psychometrics
<a href="#">PSYCH 5202</a>	Applied Psychological Data Analysis

And an additional two statistics courses chosen from these four:

<a href="#">STAT 5346</a>	Regression Analysis
<a href="#">STAT 5353</a>	Statistical Data Analysis
<a href="#">STAT 5643</a>	Probability And Statistics
<a href="#">STAT 6344</a>	Design And Analysis Of Experiments

Admissions requirements for the statistical methods in psychology certificate are available at <https://psych.mst.edu/academic-programs/graduate/admission-requirements/>

Students admitted to the certificate program will have a non-matriculated status as a graduate student. If they complete each of the four courses with a grade of B or better, they may be admitted to the Missouri S&T master's degree program in industrial-organizational

psychology or mathematics and statistics if they apply and meet the program requirements. Students who do not have all of the prerequisite courses necessary to take a course in the certificate program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

**Justification for request**

The description no longer matched the requirements and has been edited.

**Supporting Documents****Course Reviewer Comments**

**tibbettsmg (03/10/21 4:22 pm):** updated effective term to FS21. mt

Key: 305

## New Experimental Course Proposal

Date Submitted: 02/12/21 1:14 pm

Viewing: **CHEM ENG 5001.014 : Applications of Computational Fluid Dynamics**

File: 4785

Last edit: 04/13/21 10:23 am

Changes proposed by: luksc

Requested                      Fall 2021

Effective Change  
Date

Department                  Chemical and Biochemical Engineering

Discipline                    Chemical Engineering (CHEM ENG)

Course Number              5001

Topic ID                      014

Experimental  
Title

Applications of Computational Fluid Dynamics

Experimental                  Applications of CFD

Abbreviated  
Course Title

Instructors                    Joseph Smith

Experimental  
Catalog  
Description

### In Workflow

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

### Approval Path

1. 02/12/21 1:16 pm  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair
2. 03/04/21 8:33 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
3. 03/08/21 12:52  
pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair



4. 03/24/21 8:59 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:23  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 10:59  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair
7. 04/13/21 11:15  
am  
Matthew Ford  
(mvford):  
Approved for CAT  
entry

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.

#### Prerequisites

Chem Eng 3101 or Chem Eng 5100 and Chem Eng 3111 or Chem Eng 5150.

#### Field Trip

#### Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Justification for

new course:

Chem Eng 6180 (Advanced Applications of CFD) is an existing course. The instructor would like to modify the course to include projects that would be appropriate for a senior technical elective or a Master's student. This new course would have a less complex project than the 6180 course.

Semester(s)

previously taught

Spring 2019 as Chem Eng 6180

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4785

[Preview Bridge](#)

# Course Change Request

## New Experimental Course Proposal

Date Submitted: 02/16/21 9:10 am

Viewing: **CHEM ENG 5001.016 : Drug and Gene Delivery Systems**

File: 4787

Last edit: 04/13/21 10:24 am

Changes proposed by: luksc

Requested Fall 2021

Effective Change

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 5001

Topic ID 016

Experimental

Title

Drug and Gene Delivery Systems

Experimental Drug and Gene Delivery

Abbreviated

Course Title

Instructors Hu Yang

Experimental

Catalog

Description

### In Workflow

1. **RCHEMENG Chair**

2. **CCC Secretary**

3. **Engineering DSCC Chair**

4. **Pending CCC Agenda post**

5. **CCC Meeting Agenda**

6. **Campus Curricula Committee Chair**

7. **CAT entry**

8. **Registrar**

### Approval Path

1. 02/16/21 9:19 am  
Hu Yang (huyang):  
Approved for  
RCHEMENG Chair

2. 03/04/21 8:37 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

3. 03/08/21 12:52  
pm  
Stephen Raper  
(sraper):  
Approved for

Engineering DSCC  
Chair

4. 03/24/21 9:00 am

Marita Tibbetts

(tibbettsmg):

Approved for

Pending CCC

Agenda post

5. 04/13/21 10:24  
am

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Meeting Agenda

6. 04/13/21 10:59  
am

Stephen Raper

(sraper):

Approved for

Campus Curricula

Committee Chair

7. 04/13/21 11:16  
am

Matthew Ford

(mvford):

Approved for CAT

entry

Overview of drug and gene delivery systems, rational design for their applications with an emphasis on structure-property-function relationships. Three major parts: polymers and nanoparticles as drug and gene carriers; strategies to deliver drugs and genes; in vitro and in vivo techniques of assessment and validation.

#### Prerequisites

Chem 2210 and Bio Sci 2213.

## Field Trip Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Justification for

new course:

Elective in research area of new faculty member and department chair, Hu Yang

Semester(s)

previously taught

Taught at previous university, never at S&amp;T

Co-Listed

Courses:

## Course Reviewer Comments

Key: 4787

[Preview Bridge](#)

# Course Change Request

## New Experimental Course Proposal

Date Submitted: 02/23/21 3:00 pm

Viewing: **COMP SCI 4001.004 : Internet Services**

File: 4786

Last edit: 02/23/21 4:04 pm

Changes proposed by: zhupe

Requested	Fall 2021
Effective Change Date	
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	4001
Topic ID	004
Experimental Title	Internet Services
Experimental Abbreviated Course Title	Internet Services
Instructors	Gerry Howser

Experimental Catalog Description

- In Workflow
1. RCOMPSCI Chair

2. CCC Secretary

3. Engineering DSCC Chair

4. Pending CCC Agenda post

5. CCC Meeting Agenda

6. Campus Curricula Committee Chair

7. CAT entry

8. Registrar

- Approval Path
1. 02/23/21 3:57 pm  
Samuel Frimpong (frimpong):  
Approved for RCOMPSCI Chair

2. 02/23/21 4:04 pm  
Marita Tibbetts (tibbettsmg):  
Approved for CCC Secretary

3. 02/26/21 8:46 am  
Stephen Raper (sraper):  
Approved for

Engineering DSCC  
Chair

4. 03/24/21 9:01 am

Marita Tibbetts

(tibbettsmg):

Approved for

Pending CCC

Agenda post

5. 04/13/21 10:21

am

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Meeting Agenda

6. 04/13/21 10:59

am

Stephen Raper

(sraper):

Approved for

Campus Curricula

Committee Chair

7. 04/13/21 11:18

am

Matthew Ford

(mvford):

Approved for CAT

entry

This course is designed to introduce the protocols, hardware, and services required to provide the Internet services most users expect. These include Name Service, Message Routing, Email, Dynamic Configuration of the network and hosts, Private Subnetworking, and Web Services. These will be implemented using Raspberry Pi microcomputers.

#### Prerequisites

A grade of "C" or better in Comp Sci 3610.

## Field Trip Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Justification for

new course:

The Department currently teaches a networking course and this is an excellent follow up course. Very few departments teach a course in Internet services that is hands-on.

Semester(s)

previously taught

Co-Listed

Courses:

### Course Reviewer Comments

Key: 4786

[Preview Bridge](#)



## New Experimental Course Proposal

Date Submitted: 03/17/21 4:45 pm

Viewing: **GEO ENG 6001.006 : Advanced Remote Sensing Methods in Hydrology**

File: 4799

Last edit: 04/14/21 9:36 am

Changes proposed by: smithryang

Requested                      Fall 2021

Effective Change  
Date

Department                  Geosciences and Geological and Petroleum  
Engineering

Discipline                    Geological Engineering (GEO ENG)

Course Number              6001

Topic ID                      006

Experimental  
Title

Advanced Remote Sensing Methods in Hydrology

Experimental                  Remote Sensing Hydrology

Abbreviated  
Course Title

Instructors                    Ryan Smith

Experimental  
Catalog  
Description

### In Workflow

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

### Approval Path

1. 03/17/21 6:01 pm  
David Borrok  
(borrokd):  
Approved for  
RGEOENG Chair
2. 03/18/21 8:35 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
3. 03/26/21 3:17 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair

4. 03/29/21 11:05  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:26  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 11:00  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair
7. 04/13/21 11:20  
am  
Matthew Ford  
(mvford):  
Approved for CAT  
entry
8. 04/14/21 9:34 am  
Marita Tibbetts  
(tibbettsmg):  
Rollback to CCC  
Meeting Agenda  
for Registrar
9. 04/14/21 9:37 am  
Marita Tibbetts  
(tibbettsmg):

Approved for CCC  
Meeting Agenda  
10. 04/14/21 9:39 am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair  
11. 04/14/21 9:53 am  
Matthew Ford  
(mvford):  
Approved for CAT  
entry

Students will learn about methods for monitoring the flux and condition of surface water and groundwater with airborne and spaceborne sensors. Thermal, passive microwave, microwave radar and gravimetric sensors will be used. Problems such as groundwater depletion, slope stability and flooding will be investigated using advanced GIS tools.

#### Prerequisites

Experience with GIS is required. This requirement can be met by taking either Geo Eng 3148 or Geo Eng 5144, or equivalent course or work experience or consent of instructor.

#### Field Trip Statement

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

#### Justification for new course:

Remote sensing hydrology is a growing field with many practical applications for both graduate students and advanced undergraduate students. However, there are currently no courses in the catalog that cover this material in sufficient depth for a student to become proficient. The Geological Engineering, Geology, Environmental

Engineering, Biology and Computer Science departments will all likely have students that have interest in using some or all of the tools discussed in this course.

Semester(s)

previously taught

0

Co-Listed

Courses:

Course Reviewer

Comments

**sraper (03/26/21 3:17 pm):** need to discuss or modify this prereq.

**tibbettsmg (04/14/21 9:34 am):** Rollback: rollback to remove same discipline co-list as discussed and approved by CCC. mt

**tibbettsmg (04/14/21 9:36 am):** removed Geo Eng 5001 co-list. Cannot co-list within the same discipline. mt

Key: 4799

[Preview Bridge](#)

# Course Change Request

## New Experimental Course Proposal

Date Submitted: 03/02/21 4:02 pm

Viewing: **MUSIC 2001.005 : Music and the World Wars**

File: 4795

Last edit: 03/03/21 6:28 am

Changes proposed by: karmannc

Requested	Spring 2022
Effective Change Date	
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	2001
Topic ID	005
Experimental Title	Music and the World Wars
Experimental Abbreviated Course Title	Music and the World Wars
Instructors	Kyle Wernke

Experimental Catalog Description

- In Workflow
1. RPHILOSO Chair

2. CCC Secretary

3. Arts & Humanities DSCC Chair

4. Pending CCC Agenda post

5. CCC Meeting Agenda

6. Campus Curricula Committee Chair

7. CAT entry

8. Registrar

- Approval Path
1. 03/02/21 4:28 pm  
Audra Merfeld-Langston (audram):  
Approved for RPHILOSO Chair

2. 03/03/21 6:29 am  
Marita Tibbetts (tibbettsmg):  
Approved for CCC Secretary

3. 03/03/21 8:04 am  
Petra Dewitt (dewittp):

Approved for Arts  
& Humanities

DSCC Chair

4. 03/24/21 9:10 am

Marita Tibbetts

(tibbettsmg):

Approved for

Pending CCC

Agenda post

5. 04/13/21 10:21

am

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Meeting Agenda

6. 04/13/21 10:59

am

Stephen Raper

(sraper):

Approved for

Campus Curricula

Committee Chair

7. 04/13/21 11:22

am

Matthew Ford

(mvford):

Approved for CAT

entry

In this course we will examine music as a catalyst for and reaction to the World Wars.

By looking at music through a variety of lenses including economic, emotional, nationalistic, and propagandist we will come to conclusions about music's role in a world ravaged by violence and war.

Prerequisites

## Field Trip Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

## Justification for

new course:

Learning about the way art impacts history is a key component of creating globally conscious adults. Through this course we will look at history through an artistic lens and encourage students to be mindful of the way they engage with art and allow it to influence themselves and their culture.

Semester(s)

previously taught

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4795

[Preview Bridge](#)

# Course Change Request

## New Experimental Course Proposal

Date Submitted: 02/18/21 8:46 am

Viewing: **SPANISH 4001.001 : Literature, Science, and Technology in Contemporary Spanish-Speaking Cultures**

File: 4791

Last edit: 02/18/21 11:53 am

Changes proposed by: karmannc

Requested	Fall 2021
Effective Change Date	
Department	Arts, Languages, & Philosophy
Discipline	Spanish (SPANISH)
Course Number	4001
Topic ID	001
Experimental Title	Literature, Science, and Technology in Contemporary Spanish-Speaking Cultures
Experimental Abbreviated Course Title	Span Lit, Sci, & Tech
Instructors	Emilia Barbosa

Experimental Catalog

### 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. 02/18/21 11:31 am  
Audra Merfeld-Langston (audram):  
Approved for RPHILOSO Chair
- 2. 02/18/21 11:53 am  
Marita Tibbetts (tibbettsmg):  
Approved for CCC Secretary



## Description

3. 02/18/21 2:27 pm  
Petra Dewitt  
(dewittp):  
Approved for Arts  
& Humanities  
DSCC Chair
4. 03/24/21 9:25 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 04/13/21 10:21  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 04/13/21 11:00  
am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair
7. 04/13/21 11:25  
am  
Matthew Ford  
(mvford):  
Approved for CAT  
entry

Discussion of unique texts, representations, and collections from distinct Spanish-speaking societies. Consideration of the social and cultural functions of science and technology through the lens of literature. Inquiry about how different societies have equated advancement and progress with challenges, solutions, and controversy.

**Prerequisites**

Any Spanish 2000 or 3000-level course or equivalent.

**Field Trip****Statement****Credit Hours****LEC: 3****LAB: 0****IND: 0****RSD: 0****Total: 3****Justification for****new course:**

Justification for new course: Expanding course offerings to meet the needs of S&T students and in particular, to contribute to the development of the new Global Engineering Program.

**Semester(s)****previously taught****Co-Listed****Courses:****Course Reviewer****Comments**

Key: 4791

[Preview Bridge](#)

# Course Change Request

## New Experimental Course Proposal

Date Submitted: 03/15/21 3:32 pm

Viewing: **STAT 4001.001 : Introduction to Statistical Data Science**

File: 4798

Last edit: 04/13/21 10:21 am

Changes proposed by: prunnion

Requested	Spring 2022
Effective Change	
Date	
Department	Mathematics & Statistics
Discipline	Statistics (STAT)
Course Number	4001
Topic ID	001
Experimental Title	Introduction to Statistical Data Science
Experimental Abbreviated Course Title	Intro Stat Data Science
Instructors	Koob

Experimental Catalog Description

- In Workflow
1. RMATHEMA Chair

2. CCC Secretary

3. Sciences DSCC Chair

4. Pending CCC Agenda post

5. CCC Meeting Agenda

6. Campus Curricula Committee Chair

7. CAT entry

8. Registrar

- Approval Path
1. 03/15/21 3:43 pm  
vsam: Approved for RMATHEMA Chair

2. 03/15/21 3:57 pm  
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary

3. 03/19/21 12:49 pm  
Katie Shannon (shannonk): Approved for

Sciences DSCC  
Chair

4. 03/24/21 9:25 am

Marita Tibbetts

(tibbettsmg):

Approved for

Pending CCC

Agenda post

5. 04/13/21 10:21

am

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Meeting Agenda

6. 04/13/21 11:00

am

Stephen Raper

(sraper):

Approved for

Campus Curricula

Committee Chair

7. 04/13/21 11:27

am

Matthew Ford

(mvford):

Approved for CAT

entry

A course introducing students to key data science methodologies and inferential thinking. A set of tools for modeling and understanding complex datasets will be developed. Methods such as regression, cross-validation, classification, tree-based methods, support vector machines, and unsupervised learning will be covered.

#### Prerequisites

Stat 3113 or Stat 3115 or Stat 3117; Math 2222 or Math 3108; Comp Sci 1500 or Comp Sci 1570.

## Field Trip Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

### Justification for

new course:

Data science is a new field which is now used in statistical data analysis. This courses fill a gap in the university's offerings by providing an introductory look at statistical data science methods which can be used by mathematicians, statisticians, computer scientists, and others seeking to understand data.

Semester(s)

previously taught

None

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4798

[Preview Bridge](#)

# Course Change Request

## New Experimental Course Proposal

Date Submitted: 02/19/21 10:37 am

Viewing: **TCH COM 5001.003 : AI and Smart Technology Communication**

File: 4793

Last edit: 02/19/21 10:55 am

Changes proposed by: kswenson

Requested Fall 2021

Effective Change

Date

Department English and Technical Communication

Discipline Technical Communication (TCH COM)

Course Number 5001

Topic ID 003

Experimental

Title

AI and Smart Technology Communication

Experimental AI Communication

Abbreviated

Course Title

Instructors David Wright

Experimental

Catalog

Description

### In Workflow

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

### Approval Path

1. 02/19/21 10:42 am  
Kristine Swenson (kswenson):  
Approved for RENGGLISH Chair
2. 02/19/21 10:55 am  
Marita Tibbetts (tibbettsmg):  
Approved for CCC Secretary
3. 02/19/21 11:38 am

Petra Dewitt  
(dewittp):  
Approved for Arts  
& Humanities  
DSCC Chair

4. 03/24/21 9:26 am

Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post

5. 04/13/21 10:21  
am

Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda

6. 04/13/21 11:00  
am

Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

7. 04/13/21 11:29  
am

Matthew Ford  
(mvford):  
Approved for CAT  
entry

The course focuses on theoretical constructs associated with artificial intelligence and smart technology communications. Students will master terminology, technologies, and hands-on exercises designed to provide an understanding of the history, present, and future of communication between humans and intelligent devices and among intelligent devices.

4/13/2021

TCH COM 5001.003: AI and Smart Technology Communication

Prerequisites

One semester of college composition or technical writing, or graduate standing.

Field Trip

Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Justification for new course:

We are expanding our 5000-level offerings to meet the demands of graduate students who need additional courses at that level and who will be well-served by this TC course with an AI/smart technology focus, which are areas of strength on campus.

Semester(s) previously taught

Co-Listed Courses:

Course Reviewer Comments

Key: 4793

[Preview Bridge](#)



PAGE REVIEW

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Your Role: FS Meeting Agenda

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/courseadmin/4081: PSYCH 6702: Personnel Selection	Devin Burns
/programadmin/192: PSYCH-BA: Psychology BA	Devin Burns
/programadmin/193: PSYCH-BS: Psychology BS	Devin Burns
/programadmin/305: PSYMTRP-CT: Statistical Methods Psych CT	Devin Burns
/miscadmin/5: School of Earth and Minerals	David Borrok
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/courseadmin/484: SYS ENG 5212: Introduction to Neural Networks and Applic	Kelvin Erickson

Page Info

Workflow Status

Attached Files

Revision History

Title: School of Earth and Minerals

Last Update: Mar 17, 2021 2:05pm

Template: cim

Page Authors: any

Workflow:

College:

Department:

# Miscellaneous Change Request

## New Miscellaneous Request

Date Submitted: 03/08/21 3:50 pm

Viewing: 5 : School of Earth and Minerals

Last edit: 03/17/21 2:05 pm

Changes proposed by: borrokdk

Request Type	Name Change
Title	School of Earth and Minerals
Description	The GGPE Department (in combination with the Mining and Explosives program) would like to change our names to the “School of Earth and Minerals”. This change would not impact any of our program, degree, or certificate names. The formation of the School has been voted on by our respective faculty members and supported by the Dean and Provost (see attachments). A majority of GGPE faculty members support the “Earth and Minerals” title. Some preferred an earlier proposed title “Earth, Energy, and Minerals”, but that was untenable for the reasons stated in the Dean’s memo (attached). The advisory boards in GGPE have been consulted and support the formation of the school. The “Earth and Minerals” name was discussed with our GGPE department-level board and they were amenable to the new name.
Supporting Documentation	<a href="#">Unit Reorganization - Dean's letter.pdf</a> <a href="#">Memo to the Dean - School Formation.pdf</a>
Course Reviewer Comments	

In Workflow

1. Registrar

2. RGEOSENG Chair

3. CCC Secretary

4. Engineering DSCC Chair

5. Pending CCC Agenda post

6. CCC Meeting Agenda

7. Campus Curricula Committee Chair

8. FS Meeting Agenda

9. Faculty Senate Chair

10. Registrar

11. Peoplesoft

Approval Path

1. 03/09/21 10:52 am

Kristy Giacomelli-Feys (kristyg):

Approved for Registrar

2 03/09/21 10:56

David Borrok  
(borrokd):  
Approved for  
RGEOSENG Chair  
3. 03/09/21 11:26  
am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary  
4. 03/17/21 2:05 pm  
Stephen Raper  
(sraper):  
Approved for

# Miscellaneous Change Request

## New Miscellaneous Request

Date Submitted: 03/08/21 5:30 pm

Viewing: **6 : School of Earth and Minerals**

Last edit: 03/17/21 2:05 pm

Changes proposed by: kabp3

Request Type	Name Change
Title	School of Earth and Minerals
Description	The Mining & Explosives Engineering programs (in combination with the GGPE Department) would like to change our names to the “School of Earth and Minerals”. This change will not impact the names of our programs, degrees, or certificates. Our respective faculty members have voted on the formation of the School and the Dean and Provost are supportive of the idea (see attachments). All mining & explosives engineering faculty members support the “Earth and Minerals” name. We have consulted our industry advisory board and they have indicated their support for the formation of the school.
Supporting Documentation	<a href="#">Memo to the Dean - School Formation.pdf</a> <a href="#">Unit Reorganization - Dean's letter.pdf</a>

Course Reviewer  
Comments