



Campus Curricula Committee Meeting Agenda

May 3, 2022

8:15am - 9:30am, Bertelsmeyer 110H

(For Faculty Senate Meeting of June 9, 2022)

Review of submitted Course Change forms:

File: 4779.1 BIO SCI 5393 : Immunology
File: 140.1 BIO SCI 5493 : General Virology
File: 1633.2 CHEM 5220 : Physical Organic Chemistry
File: 1040.14 CHEM ENG 2100 : Chemical Engineering Material & Energy Balances
File: 2041.4 CHEM ENG 2110 : Chemical Engineering Thermodynamics I
File: 4280.9 CHEM ENG 3101 : Fundamentals of Transport in Chemical and Biochemical Engineering
File: 4279.27 CHEM ENG 3111 : Numerical Computing in Chemical and Biochemical Engineering
File: 436.6 CHEM ENG 3120 : Chemical Engineering Thermodynamics II
File: 4282.14 CHEM ENG 3131 : Separations in Chemical and Biochemical Engineering
File: 4281.9 CHEM ENG 3141 : Process Operations in Chemical and Biochemical Engineering
File: 1038.12 CHEM ENG 3150 : Chemical Engineering Reactor Design
File: 4285.18 CHEM ENG 4091 : Chemical Process Design I
File: 4290.6 CHEM ENG 5250 : Isolation and Purification of Biologicals
File: 4269 COMP SCI 5701 : Experiential Entrepreneurship for Computer Scientists
File: 502.1 ECON 4430 : Cost-Benefit Analysis
File: 1714.1 LATIN 2001 : Special Topics
File: 4872 STAT 4210 : Introduction to Statistical Data Science

Review of submitted Program Change forms:

File: 142.58 AP MATH-BS : Applied Mathematics BS
File: 146.32 BIO SC-BA : Biological Sciences BA
File: 147.20 BIO SC-BS : Biological Sciences BS
File: 16.36 CHEM-BS : Chemistry BS
File: 28.67 CMP SC-BS : Computer Science BS
File: 344.27 EDUC-BS : Education BS
File: 374.13 ENGL TC-BS : English & Technical Communication BS
File: 156.66 GE ENG-BS : Geological Engineering BS
File: 234.28 INORGPS-MS : Industrial Organizational Psychology MS
File: 95.32 MI ENG-BS : Mining Engineering BS
File: 188.10 PHILTCH-MI : Philosophy of Technology Minor



File: 121.7 PRE LAW-MI : Pre Law Minor
File: 123.9 PRE-MED-MI : Pre-Medicine Minor
File: 377.7 PROPOSED : Biological Sciences BS with Emphasis area in Medical Laboratory Scientist
File: 390 PROPOSED : Human Factors Psychology CT
File: 305.8 PSYMTRP-CT : Statistical Methods Psych CT
File: 345.8 WATERSC-MS : Water Science and Engineering MS
File: 304.13 WORKPSY-CT : Applied Workplace Psych CT

Review of submitted Experimental Course forms:

File: 4871 ART 2001.001 : Marvel Cinematic University – Media, culture, and philosophy via the superhero
File: 4794 CHEM ENG 5001.015 : Colloid Chemistry and Interfacial Engineering
File: 4870 COMP ENG 4001.001 : Practicum in Computer Engineering
File: 4869 ELEC ENG 4001.001 : Practicum in Electrical Engineering
File: 4873 TCH COM 3001.002 : Video Design and Editing

Course Change Request

Date Submitted: 03/25/22 10:29 am

Viewing: **BIO SCI 5393 ~~4393~~ : Immunology**

File: 4779.1

Last approved: 04/26/21 6:01 am

Last edit: 03/25/22 12:25 pm

Changes proposed by: shannonk

Requested	<u>Spring 2023</u> Fall 2021
Effective Change	
Date	
Department	Biological Sciences
Discipline	Biological Sciences (BIO SCI)
Course Number	<u>5393</u> 4393
Title	

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. 03/25/22 10:35 am
David Duvernell (duvernell):
Approved for
RBIOLSCI Chair
2. 03/25/22 12:25 pm
Marita Raper

(tibbettsmg):
 Approved for CCC
 Secretary
 3. 04/08/22 10:32
 am
 Katie Shannon
 (shannonk):
 Approved for
 Sciences DSCC
 Chair

History

1. Apr 26, 2021 by
 Katie Shannon
 (shannonk)

Immunology

Abbreviated Immunology
 Course Title

Catalog

Description

Introduction to the immune system, and the role of immunology in diseases and treatments. Major topics include the development of the immune system, including T cell and B cell development, innate and adaptive immunity, autoimmunity and tumor immunology.

Prerequisites

Bio Sci 2213 and Bio Sci 2223; Bio Sci 3313 is recommended.

Field Trip

Statement

none

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

Required for Majors	No
Elective for Majors	Yes

Justification for
change:

Immunology (Bio Sci 4393) is currently listed as an advanced undergraduate course but taught in a way similar to a graduate-level course having students engaged in literature review and case studies. We would like to change it to a 5000-level course so this course can also be available to graduate students, which can help grow the graduate program in Biology and related disciplines.

Semesters
previously
offered as an
experimental
course

Taught Fall 2020 as BIO SCI 4001.005

Co-Listed
Courses:

Course Reviewer
Comments

tibbettsmg (03/25/22 12:25 pm): updated term to Spring 23. MR

Key: 4779

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/25/22 10:31 am

Viewing: **BIO SCI 5493 ~~4493~~ : General Virology**

File: 140.1

Last edit: 03/25/22 12:27 pm

Changes proposed by: shannonk

Requested	<u>Spring 2023</u> Fall 2014
Effective Change	
Date	
Department	Biological Sciences
Discipline	Biological Sciences (BIO SCI)
Course Number	<u>5493</u> 4493
Title	

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. 03/25/22 10:35 am
David Duvernell (duvernell):
Approved for
RBIOLSCI Chair
2. 03/25/22 12:28 pm
Marita Raper

(tibbettsmg):
 Approved for CCC
 Secretary
 3. 04/08/22 10:32
 am
 Katie Shannon
 (shannonk):
 Approved for
 Sciences DSCC
 Chair

General Virology

Abbreviated Course Title General Virology

Catalog

Description

An overview of the field of virology, including plant, animal, and bacterial viruses. Discussions will include morphology, classification, virus-host interactions, genetics, clinical and industrial aspects of viruses, and viruses as model systems for basic biological studies.

Prerequisites

Bio Sci 1113 or [Bio Sci 1213](#); [Bio Sci 2213](#) or [Bio Sci ~~Bio Sci 2213~~](#), 3313, Chem 1310, [Chem 1320](#), [Chem 2210](#).

Field Trip

Statement

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

Total: 3

Required for No

Majors

Elective for No

Majors

Justification for
change:

General Virology is an advanced undergraduate course and taught in a manner similar to a graduate level course with students engaged in the current literature and case studies. To support growing our biology and related graduate programs while continuing to make the course available to undergraduates we would like to offer the course as Bio Sci 5493

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

tibbettsmg (03/25/22 12:27 pm): updated prereq formatting and term to Spring 23.
MR

Key: 140

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/11/22 12:39 pm

Viewing: **CHEM 5220 : Physical Synthetic**

Organic Chemistry

File: 1633.2

Last approved: 04/11/22 11:23 am

Last edit: 04/13/22 2:05 pm

Changes proposed by: tschuman

Requested Spring 2023 ~~Fall 18 Prereq~~

Effective Change ~~Attribute Update~~

Date

Department Chemistry

Discipline Chemistry (CHEM)

Course Number 5220

Title

In Workflow

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

Approval Path

1. 04/12/22 8:20 am
Rainer Glaser
(GlaserR):
Approved for
RCHEMIST Chair
2. 04/13/22 2:05 pm
Marita Raper
(tibbettsmg):
Approved for CCC

Secretary

3. 04/22/22 10:17
am

Katie Shannon

(shannonk):

Approved for

Sciences DSCC

Chair

History

1. Apr 11, 2022 by
tibbettsmg
(1633.1)

Physical ~~Synthetic~~ Organic Chemistry

Abbreviated Physical ~~Synthetic~~ Organic

Course Title Chem ~~Chemistry~~

Catalog

Description

Mechanisms of organic reactions and the tools used for their elucidation including kinetic isotope effects, linear-free energy relationships, MO theory and more advanced electronic structure methods, non-covalent interactions and other fundamental topics. ~~A systematic study of organic reactions, their mechanisms and synthetic applications.~~ Graduate students are expected to demonstrate a higher level of proficiency during assessments.

Prerequisites

Chem 2220.

Field Trip

Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Required for Majors	No
Elective for Majors	No

Justification for
change:

The graduate student curriculum is being aligned with organic chemistry disciplines. This edit coincides with previous editing of the Chem 5210 course into the synthetic organic chemistry remedial course as first of the introductory, graduate level organic series. This course, like 5210, is remedial or introductory in physical organic chemistry for graduate students or an upper level elective for undergraduate students.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer

Comments

tibbettsmg (04/13/22 2:05 pm): updated term to SP 23. MR

Key: 1633

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/12/22 12:00 pm

Viewing: **CHEM ENG 2100 : Chemical**

Engineering Material & Energy Balances

File: 1040.14

Last approved: 05/07/18 3:34 am

Last edit: 04/13/22 12:17 pm

Changes proposed by: luksc

Programs
referencing this
course

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

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

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

Other Courses
referencing this
course

In The Prerequisites:

[CHEM ENG 2110 : Chemical Engineering Thermodynamics I](#)

[CHEM ENG 3111 : Numerical Computing in Chemical and
Biochemical Engineering](#)

[CHEM ENG 3120 : Chemical Engineering Thermodynamics II](#)

Requested Spring ~~2019~~ 2023

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. 04/12/22 12:00
pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 04/13/22 12:17
pm
Marita Raper
(tibbettsmg):

Discipline Chemical Engineering (CHEM ENG)

Course Number 2100

Title

Approved for CCC

Secretary

3. 04/19/22 9:05 am

Stephen Raper

(sraper):

Approved for

Engineering DSCC

Chair

History

1. May 4, 2015 by
luksc (1040.1)

2. Oct 21, 2016 by
forcinit (1040.4)

3. May 7, 2018 by
forcinit (1040.9)

Chemical Engineering Material & Energy Balances

Abbreviated Chem Eng Mat and E Bal

Course Title

Catalog

Description

The application of mathematics, physics and chemistry to industrial chemical processes. The use of equations of state, chemical reaction stoichiometry, and the conservation of mass and energy to solve chemical engineering problems.

Prerequisites

A grade of "C" Chem-1320 or better in Chem 1320 or Geology 3410 and in 3410;
Math 1215 or ~~or~~ Math 1221; preceded or ~~or~~ accompanied by Physics 1135.

Field Trip

Statement

Credit Hours

LEC: 4

LAB: 0

IND: 0

RSD: 0

Total: 4

Required for
Majors

Yes

Elective for
Majors

No

Justification for
change:

Since students will be directly admitted, we are moving our department admission requirements into the course prerequisites.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer

Comments

tibbettsmg (04/13/22 12:17 pm): updated term to Spring 23. formatted prereq. MR

Key: 1040

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/12/22 12:00 pm

Viewing: **CHEM ENG 2110 : Chemical Engineering Thermodynamics I**

File: 2041.4

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

Last edit: 04/13/22 12:18 pm

Changes proposed by: luksc

Programs
referencing this
course

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

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

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

Other Courses
referencing this
course

In The Prerequisites:

[CHEM ENG 3101 : Fundamentals of Transport in Chemical and Biochemical Engineering](#)

[CHEM ENG 3120 : Chemical Engineering Thermodynamics II](#)

[CHEM ENG 5315 : Corrosion and Its Prevention](#)

[MET ENG 3220 : Introduction To Extractive Metallurgy](#)

Requested Spring 2023 ~~08/17/2015~~
Effective Change
Date

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. 04/12/22 12:02 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 04/13/22 12:18 pm
Marita Raper
(tibbettsmg):

Department Chemical and Biochemical Engineering
 Discipline Chemical Engineering (CHEM ENG)
 Course Number 2110
 Title

Approved for CCC
 Secretary
 3. 04/19/22 9:05 am
 Stephen Raper
 (sraper):
 Approved for
 Engineering DSCC
 Chair

History

1. May 4, 2015 by
 luksc (2041.1)

Chemical Engineering Thermodynamics I

Abbreviated Chem Engr Thermo I
 Course Title

Catalog

Description

Development and application of the laws and fundamental relationships of thermodynamics to industrial chemical processes. Emphasis is placed on the estimation of thermophysical property values for applications in chemical process engineering.

Prerequisites

A grade of "C" ~~Preceded by Math 2222; Preceded~~ or better in Math 2222; Preceded
or accompanied by Chem Eng 2100.

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:

Since students will be directly admitted, we are moving our department admission requirements into the course prerequisites.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

tibbettsmg (04/13/22 12:18 pm): updated term to Spring 23. formatted prereq. MR

Key: 2041

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/12/22 12:01 pm

Viewing: **CHEM ENG 3101 : Fundamentals of Transport in Chemical and Biochemical Engineering**

File: 4280.9

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

Last edit: 04/13/22 12:18 pm

Changes proposed by: luksc

Programs
referencing this
course

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

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

Other Courses
referencing this
course

In The Prerequisites:

[CHEM ENG 3131 : Separations in Chemical and Biochemical Engineering](#)

[CHEM ENG 3141 : Process Operations in Chemical and Biochemical Engineering](#)

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

[CHEM ENG 5100 : Intermediate Transport Phenomena](#)

[CHEM ENG 5340 : Principles of Environmental Monitoring](#)

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

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

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. 04/12/22 12:02 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 04/13/22 12:19 pm
Marita Raper
(tibbettsmg):

Requested [Spring 2023](#) ~~Fall 18 Prereq~~
 Effective Change ~~Attribute Update~~
 Date
 Department Chemical and Biochemical Engineering
 Discipline Chemical Engineering (CHEM ENG)
 Course Number 3101
 Title

Approved for CCC
 Secretary
 3. 04/19/22 9:05 am
 Stephen Raper
 (sraper):
 Approved for
 Engineering DSCC
 Chair

History

1. May 24, 2016 by
 Daniel Forciniti
 (forcinit)

Fundamentals of Transport in Chemical and Biochemical Engineering

Abbreviated Transport Phenomena
 Course Title

Catalog

Description

This course covers the fundamentals of momentum, energy, and mass transport. Phenomenological mechanisms of molecular transport, fluid static, analysis of a fluid in motion laminar and turbulent flow are covered. The general differential equations for momentum, energy and mass transfer are presented and solved for a variety of chemical engineering problems.

Prerequisites

[A grade of "C" or better in](#) Math 3304 and Chem Eng 2110. ~~Admitted to the Chemical Engineering Program.~~

Field Trip

Statement

Credit Hours LEC: 4 LAB: 0 IND: 0 RSD: 0
 Total: 4

Required for Majors	Yes
Elective for Majors	No

Justification for
change:

Since students will be directly admitted, we are moving our department admission requirements into the course prerequisites.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

tibbettsmg (04/13/22 12:18 pm): updated term to Spring 23. formatted prereq. MR

Key: 4280

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/12/22 12:02 pm

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

File: 4279.27

Last approved: 05/03/21 6:01 am

Last edit: 04/13/22 12:21 pm

Changes proposed by: luksc

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. 04/12/22 12:08 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 04/13/22 12:21 pm
Marita Raper
(tibbetmsg):

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~~ **2023**

Effective Change

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)
Course Number 3111
Title

Approved for CCC
Secretary
3. 04/19/22 9:05 am
Stephen Raper
(sraper):
Approved for
Engineering DSCC
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)
6. May 3, 2021 by
luksc (4279.25)

Numerical Computing in Chemical and Biochemical Engineering

Abbreviated Numerical Computing
Course Title

Catalog

Description

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

Prerequisites

A grade of "C" or better in Math 3304. ~~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 LAB: 0 IND: 0 RSD: 0

Total: 3

Required for Yes

Majors

Elective for No

Majors

Justification for
change:

Since students will be directly admitted, we are moving our department admission requirements into the course prerequisites.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer

Comments

tibbettsmg (04/13/22 12:20 pm): updated term to Spring 23. formatted prereq. MR

Key: 4279

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/12/22 12:03 pm

Viewing: **CHEM ENG 3120 : Chemical Engineering Thermodynamics II**

File: 436.6

Last approved: 10/16/17 11:55 am

Last edit: 04/13/22 12:21 pm

Changes proposed by: luksc

Programs
referencing this
course

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

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

Other Courses
referencing this
course

In The Prerequisites:

[CHEM ENG 3131 : Separations in Chemical and Biochemical Engineering](#)

[CHEM ENG 3141 : Process Operations in Chemical and Biochemical Engineering](#)

[CHEM ENG 3200 : Biochemical Separations](#)

[CHEM ENG 5161 : Intermediate Molecular Engineering](#)

[CHEM ENG 5220 : Intermediate Engineering Thermodynamics](#)

[MET ENG 5310 : Corrosion and Its Prevention](#)

Requested [Spring 2023](#) ~~Fall 18 Prereq~~
Effective Change ~~Attribute Update~~

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. 04/12/22 12:08 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 04/13/22 12:21 pm
Marita Raper
(tibbettsmg):

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 3120

Title

Approved for CCC
Secretary
3. 04/19/22 9:05 am
Stephen Raper
(sraper):
Approved for
Engineering DSCC
Chair

History

1. Oct 16, 2017 by
forcinit (436.1)

Chemical Engineering Thermodynamics II

Abbreviated Chem Engr Thermo II

Course Title

Catalog

Description

Physical, chemical and reaction equilibrium. Study of the thermophysical relationships of multicomponent, multiphase equilibrium. Application of equilibrium relationships to the design and operation of chemical mixers, separators and reactors.

Prerequisites

A grade ~~Grade~~ of "C" or better in Chem Eng 2100 and Chem Eng 2110. ~~2110; Chem Eng majors only.~~

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:

Since students will be directly admitted, we are moving our department admission requirements into the course prerequisites.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

tibbettsmg (04/13/22 12:21 pm): updated term to Spring 23. formatted prereq. MR

Key: 436

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/12/22 12:03 pm

Viewing: **CHEM ENG 3131 : Separations in Chemical and Biochemical Engineering**

File: 4282.14

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

Last edit: 04/13/22 12:23 pm

Changes proposed by: luksc

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. 04/12/22 12:08 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 04/13/22 12:23 pm
Marita Raper
(tibbettsmg):

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

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

[CHEM ENG 5120 : Interfacial Phenomena In Chemical Engineering](#)

[CHEM ENG 5170 : Physical Property Estimation](#)

[CHEM ENG 5250 : Isolation and Purification of Biologicals](#)

[CHEM ENG 5305 : Hazardous Materials Management](#)

[CHEM ENG 5310 : Structure and Properties of Polymers](#)

[CHEM ENG 5330 : Alternative Fuels](#)

[CHEM ENG 5350 : Environmental Chemodynamics](#)

Requested [Fall 2022](#) ~~Spring 2020~~
 Effective Change
 Date
 Department Chemical and Biochemical Engineering
 Discipline Chemical Engineering (CHEM ENG)
 Course Number 3131
 Title

Approved for CCC
 Secretary
 3. 04/19/22 9:05 am
 Stephen Raper
 (srapr):
 Approved for
 Engineering DSCC
 Chair

History

1. Jan 10, 2017 by Daniel Forciniti (forciniti)
2. Mar 6, 2017 by kristyg (4282.11)
3. Jun 17, 2019 by jcwang (4282.12)

Separations in Chemical and Biochemical Engineering

Abbreviated Process Separations
 Course Title

Catalog

Description

Flash and column distillation. McCabe-Thiele method, plate efficiencies. Azeotropes.
 Batch distillation. Absorption and stripping. Washing and leaching.

Prerequisites

Chem Eng 3101, Chem Eng 3111, and Chem Eng 3120. ~~Admitted to the Chemical Engineering 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:

Since students will be directly admitted, we are moving our department admission requirements into the course prerequisites.

Semesters

previously
offered as an
experimental
course

Co-Listed

Courses:

Course Reviewer

Comments

tibbettsmg (04/13/22 12:23 pm): non-affecting change. updated term to FS22. MR

Key: 4282

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/12/22 12:03 pm

Viewing: **CHEM ENG 3141 : Process Operations
in Chemical and Biochemical Engineering**

File: 4281.9

Last approved: 06/25/18 3:38 am

Last edit: 04/13/22 12:23 pm

Changes proposed by: luksc

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. 04/12/22 12:08
pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 04/13/22 12:24
pm
Marita Raper
(tibbettsmg):

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 4101 : Chemical Engineering Laboratory I](#)

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

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

[CHEM ENG 5250 : Isolation and Purification of Biologicals](#)

Requested	Fall 2022 Spring 2019
Effective Change	
Date	
Department	Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 3141

Title

Approved for CCC
Secretary
3. 04/19/22 9:05 am
Stephen Raper
(sraper):
Approved for
Engineering DSCC
Chair

History

1. May 24, 2016 by
Daniel Forciniti
(forcinit)
2. Jun 25, 2018 by
forcinit (4281.6)

Process Operations in Chemical and Biochemical Engineering

Abbreviated Process Operations

Course Title

Catalog

Description

Design and selection of pumps, fans, compressors, valves, and ejectors. Design and selection of heat exchangers, condensers and reboilers. Design of mixing equipment, sterilizers, sedimentation vessels, centrifuges, and filtration and ultrafiltration units.

Prerequisites

Chem Eng 3101 and Chem Eng 3120. ~~Admitted to the Chemical Engineering 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:

Since students will be directly admitted, we are moving our department admission requirements into the course prerequisites.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer

Comments

tibbettsmg (04/13/22 12:23 pm): non-affecting change. updated term to FS22. MR

Key: 4281

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/12/22 12:04 pm

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

File: 1038.12

Last approved: 05/03/21 6:00 am

Last edit: 04/13/22 12:24 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. 04/12/22 12:08 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 04/13/22 12:24 pm
Marita Raper
(tibbettsmg):

Requested Fall ~~Spring~~ 2022
 Effective Change
 Date
 Department Chemical and Biochemical Engineering
 Discipline Chemical Engineering (CHEM ENG)
 Course Number 3150
 Title

Approved for CCC
 Secretary
 3. 04/19/22 9:05 am
 Stephen Raper
 (sraper):
 Approved for
 Engineering DSCC
 Chair

History

1. Jun 29, 2015 by luksc (1038.1)
2. May 24, 2016 by forcinit (1038.5)
3. May 3, 2021 by luksc (1038.10)

Chemical Engineering Reactor Design

Abbreviated Chem Engr Reactor Design
 Course Title

Catalog

Description

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

Prerequisites

Preceded or accompanied 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 Majors	Yes
Elective for Majors	No

Justification for
change:

Since students will be directly admitted, we are moving our department admission requirements into the course prerequisites.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

tibbettsmg (04/13/22 12:24 pm): non-affecting change. updated term to FS22. MR

Key: 1038

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/12/22 12:06 pm

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

File: 4285.18

Last approved: 05/03/21 6:01 am

Last edit: 04/13/22 12:26 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 Effective Change Date	Spring 2022 <u>2023</u>
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4091
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. 04/12/22 12:09 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 04/13/22 12:27 pm
Marita Raper
(tibbetmsg):

Approved for CCC
Secretary

3. 04/19/22 9:05 am

Stephen Raper

(sraper):

Approved for

Engineering DSCC
Chair

History

1. Jan 10, 2017 by

Daniel Forciniti

(forcinit)

2. Mar 6, 2017 by

kristyg (4285.12)

3. Feb 4, 2019 by

jcwang (4285.14)

4. May 3, 2021 by

luksc (4285.16)

Chemical Process Design I

Abbreviated Chem Process Design I

Course Title

Catalog

Description

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](#); ~~3150 or Chem Eng 5250~~; preceded or accompanied by either English 3560 or English 1160.

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:

All students take ChemEng 3150 so this simplifies the list

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

tibbettsmg (04/13/22 12:26 pm): updated term to Spring 23. MR

Key: 4285

[Preview Bridge](#)

Course Change Request

Date Submitted: 04/12/22 12:09 pm

Viewing: **CHEM ENG 5250 : Isolation and Purification of Biologicals**

File: 4290.6

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

Last edit: 04/13/22 12:30 pm

Changes proposed by: luksc

Programs
referencing this
course

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

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

Other Courses
referencing this
course

In The Prerequisites:

[CHEM ENG 4091 : Chemical Process Design I](#)

[CHEM ENG 4201 : Biochemical Separations and Control Laboratory](#)

Requested	Spring 2023 Fall 18 Prereq
Effective Change Date	Attribute Update
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. 04/12/22 12:09 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 04/13/22 12:30 pm
Marita Raper
(tibbettsmg):

Course Number 5250

Title

Approved for CCC
Secretary
3. 04/19/22 9:05 am
Stephen Raper
(sraper):
Approved for
Engineering DSCC
Chair

History

1. May 24, 2016 by
Daniel Forciniti
(forcinit)

Isolation and Purification of Biologicals

Abbreviated Iso and Purif of Biolog
Course Title

Catalog

Description

Isolation and purification of biologicals with emphasis on biopharmaceuticals. Principles and applications of chromatography, lyophilization, and product formulation. Use of ultrafiltration and diafiltration in the processing of protein products. Disposable technology.

Prerequisites

[Preceded or accompanied by](#) Chem Eng 3131 and Chem Eng 3141.

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:

Modifying prerequisites to make it easier for students to fit in the courses before graduation

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

tibbettsmg (04/13/22 12:30 pm): updated term to Spring 23. MR

Key: 4290

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 04/11/22 1:07 pm

Viewing: **COMP SCI 5701 : Experiential**

Entrepreneurship for Computer Scientists

File: 4269

Last edit: 04/12/22 12:03 pm

Changes proposed by: zhupe

Requested	Fall 2022
Effective Change Date	
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	5701
Title	

In Workflow

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

Approval Path

1. 04/11/22 3:21 pm
Samuel Frimpong (frimpong):
Approved for RCOMPSCI Chair
2. 04/12/22 12:03 pm
Marita Raper (tibbetmsg):

Approved for CCC
Secretary

3. 04/19/22 9:06 am

Stephen Raper

(sraper):

Approved for

Engineering DSCC

Chair

Experiential Entrepreneurship for Computer Scientists

Abbreviated CompSci Entrepreneurship

Course Title

Catalog

Description

Students will work in teams mentored by experienced entrepreneurs to generate innovative ideas and transform them into business models for economically viable knowledge tech companies. Experiential learning will be used in live customer discovery, prototyping and market validation. The prototyping phase will contain a significant computer science component.

Prerequisites

A grade of "C" or better in Comp Sci 3100 or Comp Sci 4090.

Field Trip

Statement

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

Total: 3

Required for	No
--------------	----

Majors

Elective for	Yes
--------------	-----

Majors

Justification for

new course:

The experimental version of this course (COMP SCI 5001) has been taught twice and the department plans to continue offering this course, so requests that it be given permanent status.

Semesters

previously

offered as an

experimental

course

Enrollment:13 Fall 2021

Enrollment:12 Spring 2020

Co-Listed

Courses:

Course Reviewer

Comments

tibbettsmg (04/12/22 12:03 pm): enrollment verified. updated prereq formatting.

MR

Key: 4269

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/23/22 3:56 pm

Viewing: **ECON 4430 : Cost-Benefit Analysis**

File: 502.1

Last edit: 03/23/22 4:15 pm

Changes proposed by: davismc

Programs
referencing this
course

[PRE LAW-MI: Pre Law Minor](#)

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

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

[E/T ECN-MI: E/T Economics Minor](#)

Requested	Spring 2023 Fall 18 Prereq
Effective Change	Attribute Update
Date	
Department	Economics
Discipline	Economics (ECON)
Course Number	4430
Title	

In Workflow

1. **RECONOMI 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. 03/23/22 3:57 pm
Michael Davis
(davismc):
Approved for
RECONOMI Chair
2. 03/23/22 4:16 pm
Marita Raper
(tibbettsmg):
Approved for CCC

Secretary
 3. 03/23/22 8:04 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for
 Social Sciences
 DSCC Chair

Cost-Benefit Analysis

Abbreviated Cost-Benefit Analysis
 Course Title

Catalog

Description

Investigates the rationale for cost-benefit analysis within a free enterprise setting. Discussion of market efficiency and failure; determination of social costs and benefits; applications of cost-benefit analysis; and, problems remaining in theory and practice.

Prerequisites

Econ 1100. ~~2100~~.

Field Trip

Statement

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

Total: 3

Required for	No
--------------	----

Majors

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

Majors

Justification for

change:

Will allow more students to take the class, and the new prerequisite matches up

better with the requirements of the class.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer

Comments

tibbettsmg (03/23/22 4:15 pm): missed Fall 22 deadline. updated effective term to Sp23. MR

Key: 502

[Preview Bridge](#)

Course Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 04/06/22 1:43 pm

Viewing: **LATIN 2001 : Special Topics**

File: 1714.1

Last edit: 04/12/22 11:20 am

Changes proposed by: msp7h

Requested Fall 2022 ~~2014~~

Effective Change

Date

Department Arts, Languages, & Philosophy

Discipline LATIN (LATIN)

Course Number 2001

Title

In Workflow

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

Approval Path

1. 04/07/22 1:16 pm
Audra Merfeld-Langston
(audram):
Approved for
RPHILOSΟ Chair
2. 04/12/22 11:20

am
 Marita Raper
 (tibbettsmg):
 Approved for CCC
 Secretary
 3. 04/12/22 11:21
 am
 Marita Raper
 (tibbettsmg):
 Rollback to CCC
 Secretary for
 Pending CCC
 Agenda post
 4. 04/12/22 11:23
 am
 Marita Raper
 (tibbettsmg):
 Approved for CCC
 Secretary
 5. 04/12/22 11:38
 am
 Petra Dewitt
 (dewittp):
 Approved for Arts
 & Humanities
 DSCC Chair

Special Topics

Abbreviated Special Topics

Course Title

Topics Titles

Catalog

Description

This course is designed to give the department an opportunity to test a new course.

Variable title.

Prerequisites

Field Trip

Statement

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

Total: 0-6

Required for	No
--------------	----

Majors

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

Majors

Justification for
change:

Latin courses have not been offered by the department in over a decade.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer

Comments

tibbettsmg (04/12/22 11:21 am): Rollback: rollback to modify workflow approvals.

MR

Key: 1714

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 04/08/22 11:41 am

Viewing: **STAT 4210 : Introduction to Statistical Data Science**

File: 4872

Last edit: 04/12/22 11:32 am

Changes proposed by: prunion

Programs
referencing this
course

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

Requested	Fall 2022
Effective Change Date	
Department	Mathematics & Statistics
Discipline	Statistics (STAT)
Course Number	4210
Title	

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. CAT entry
11. Peoplesoft

Approval Path

1. 04/08/22 12:03 pm
John Singler (singlerj):
Approved for
RMATHEMA Chair
2. 04/12/22 11:32 am

Marita Raper
 (tibbettsmg):
 Approved for CCC
 Secretary
 3. 04/18/22 4:07 pm
 Katie Shannon
 (shannonk):
 Approved for
 Sciences DSCC
 Chair

Introduction to Statistical Data Science

Abbreviated Intro Stat Data Science
 Course Title

Catalog

Description

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

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

Majors

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

Majors

Justification for

new course:

The emerging field of data science provides an important opportunity for Missouri S&T to attract more students, especially those who may not have considered us as an option. It also provides a way to enrich the training we provide our existing students, by preparing them for a workplace that is becoming more and more data driven. Two publications by the National Academies of Science Engineering and Medicine, *Envisioning the Data Science Discipline: The Undergraduate Perspective* and *Data Science for Undergraduates: Opportunities and Options*, lay out what undergraduate data science education should look like, but more importantly, discuss the importance of data science education not only as a specialized discipline in itself, but as an essential component of all undergraduate education. One of their recommendations specifically states the following: "To prepare their graduates for this new data driven era, academic institutions should encourage the development of a basic understanding of data science in all undergraduates."

Because of these reasons and others, the Missouri S&T Academic Program Committee (APC) has recommended that "individual departments create data science pathways for all students on campus." The APC report goes onto recommend the creation of undergraduate certificates, minors, and emphasis areas within the BS degrees. Our proposal to modify the Statistics emphasis area into the Data Science and Statistics emphasis area under the Applied Mathematics BS degree is aligned with this recommendation, and this course is a foundational part of this change. Therefore, we are requesting a permanent course number after only offering the course one time since it will be required for the emphasis as listed in the pending DC form.

Semesters

previously

offered as an

experimental

course

Spring 2022

Co-Listed

Courses:

Course Reviewer

Comments

tibbettsmg (04/12/22 11:32 am): required for degree; skipping EC process. MR

Key: 4872

[Preview Bridge](#)

Program Change Request

Date Submitted: 04/08/22 11:46 am

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

File: 142.58

Last approved: 05/05/21 8:29 am

Last edit: 04/13/22 12:13 pm

Changes proposed by: prunnon

Catalog Pages Using this Program
[Mathematics](#)

Start Term

Fall ~~2021~~ 2022

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. kristyg

Approval Path

1. 04/08/22 12:03 pm
John Singler
(singlerj): Approved for RMATHEMA Chair
2. 04/13/22 12:14 pm
Marita Raper
(tibbettsmg): Approved for CCC Secretary
3. 04/22/22 10:17 am
Katie Shannon
(shannonk): Approved for Sciences DSCC Chair

History

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

5. Jul 21, 2015 by pantaleoa
6. Jul 21, 2015 by pantaleoa
7. Apr 25, 2016 by llene 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 Raper (tibbettsmg)
13. Mar 9, 2021 by Marita Raper (tibbettsmg)
14. May 5, 2021 by Paul Runnion (prunnion)

Bachelor of Science Applied Mathematics

A minimum of ~~120~~ **428** credit hours is required for a bachelor of science degree in applied mathematics. A minimum grade of "C" is required by the department in each course counted toward the math/stat requirement for the B.S. in applied mathematics. Moreover, the department requires that an average of at least two grade points per credit hour must be obtained for all courses taken within the department. These requirements for the B.S. degree are in addition to credit received for algebra, trigonometry, and basic ROTC.

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

Freshman Year			
First Semester	Credits	Second Semester	Credits
MATH 1101	1	MATH 1215 or 1221 ¹	4
MATH 1214 or 1211 ¹	<u>4</u>	Science Requirement ⁵	5
OR		COMP SCI 1500	3
MATH 1210 & MATH 1211	-	Language and Communication Requirement³	3
MATH 1208		ENGLISH 1160 or 1600 ⁸	<u>3</u>

CHEM 1100 ¹	1	Basic ROTC (if elected) ⁴	0
ENGLISH 1120	3		
ECON 1100 or 1200	<u>3</u>		
Campus History Requirement ²	3		
Language and Communication Requirement³	3		
Basic ROTC (if elected) ⁴	0		
	15		15
Sophomore Year			
First Semester	Credits	Second Semester	Credits
MATH 2222 ¹	4	MATH 3304 ¹	3
MATH 3108 ¹	3	MATH 3109 ¹	3
COMP SCI 1570	3	Statistics Requirement ^{1,6,7}	3
COMP SCI 1580	1	ECON 1100 or 1200	3
PHYSICS 1135	4	PHYSICS 2135	4
ENGLISH 1160 ⁸	3	Literature	<u>3</u>
Basic ROTC (if elected) ⁴	0	Basic ROTC (if elected) ⁴	0
	15		16
Junior Year			
First Semester	Credits	Second Semester	Credits
MATH 4209 ¹	3	MATH 4211 ^{1, 12}	3
Literature	3	Literature	3
SP&M S 1185 or 3245 ¹⁴	<u>3</u>	Humanities/Social Science Elective ³	<u>3</u>
Electives-Math or Stat ^{1,7,9}	3	Electives-Math or Stat ^{1,7,9}	3
Electives-Technical ¹⁰	3	Electives-Technical ¹⁰	3
Electives ¹³	3	Electives ¹³	3
	15		15
Senior Year			
First Semester	Credits	Second Semester	Credits
Capstone Course ^{1,7,11}	3	Electives-Math or Stat ^{1,7,9}	3
Electives-Math or Stat ^{1,7,9}	3	Electives-Technical ¹⁰	3
Electives-Technical ¹⁰	6	Electives ¹³	8
Electives ¹³	6		
Humanities/Social Science Elective ³	<u>3</u>		
	15		14
Total Credits: 120			

1

A minimum grade of "C" is required by the department in each course counted toward the math/stat requirement for the B.S. in applied mathematics. Moreover, the department requires that an average of at least two grade points per credit hour must be obtained for all courses taken within the department.

2

May be met by [HISTORY 1200](#), [HISTORY 1300](#), [HISTORY 1310](#), or [POL SCI 1200](#).

3

The two humanities/social science electives (at least 3 credits each) are to be selected from lecture courses in ART, ENGLISH, ETYM, FRENCH, GERMAN, HISTORY, MUSIC, PHILOS, POL SCI, PSYCH, RUSSIAN, SPANISH, SP&M S, and THEATRE.

4

Basic ROTC may be elected in the freshman and sophomore years, but is not creditable toward a degree. Up to six credit hours of advanced ROTC may be credited as free electives towards a degree.

5

May be met by [CHEM 1310](#) and [CHEM 1319](#) or by [BIO SCI 1113](#) and [BIO SCI 1219](#).

6

May be met by [STAT 3113](#), [STAT 3115](#), or [STAT 3117](#).

7

No course may be used to satisfy more than one degree requirement, except as otherwise noted.

8

May also be satisfied by [ENGLISH 3560](#).

9

The student must choose two from the following five groups and then complete six hours in each of the chosen groups

1. [MATH 5105](#), [MATH 5106](#), [MATH 5107](#), [MATH 5108](#)
2. [MATH 5105](#), [MATH 5215](#), [MATH 4530](#) 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](#).

10

Courses in biology, chemistry, computer science, economics, engineering, geology, mechanics, or physics approved by advisor. The general math curriculum requires 15 credit hours; actuarial science emphasis area, 9 credit hours; algebra/discrete math emphasis area, 15 credit hours; computational math emphasis area, 9 credit hours. All technical elective requirements are built in to the statistics emphasis area via the included computer science minor. All technical elective requirements are built in to the applied analysis emphasis area.

11

The capstone experience for all applied mathematics majors (other than students completing the secondary education emphasis area) consists of a course chosen from the following list: [MATH 4098](#) (three credits), [MATH 4099](#) or [STAT 4099](#) (three credits), [MATH 5107](#), [MATH 5215](#), [MATH 5603](#), [STAT 5346](#), [STAT 5353](#), [STAT 5755](#), or [STAT 5756](#).

12

Math 4211 is not required for students earning the Statistics emphasis area.

13

Sufficient free electives to earn a minimum of 120 credit hours.

14

May also be satisfied by one of the two complete four-course sequences in Advanced ROTC.

Emphasis Areas at the Bachelor of Science Level

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

Actuarial Science Emphasis Area

Required courses:

[STAT 5643](#)

Probability And Statistics

3

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

In addition, the student must pass the first actuarial science exam. Note that the capstone requirement and the four math/stat electives are **is** included in, not separate from, this list of courses.

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

Algebra/Discrete Mathematics Emphasis Area

Required courses:

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

Computational Mathematics Emphasis Area

Required courses:

STAT 5353	Statistical Data Analysis (Satisfies Capstone requirement)	3
STAT 5346	Regression Analysis	3
COMP SCI 1575	Data Structures	3
COMP SCI 3200	Introduction To Numerical Methods	3
Select three of the following:		
MATH 5302	Intermediate Differential Equations	3
MATH 5325	Partial Differential Equations	3

MATH 5603	Methods of Applied Mathematics	3
MATH 5604	Introduction to Numerical Methods for Differential Equations	3
Select one of the following:		3
COMP SCI 5201	Object-Oriented Numerical Modeling I	3
COMP SCI 5402	Introduction to Data Mining	3
MECH ENG 5139	Computational Fluid Dynamics	3
AERO ENG 5139	Computational Fluid Dynamics	3
MECH ENG 5212	Introduction to Finite Element Analysis	3
AERO ENG 5212	Introduction to Finite Element Analysis	3
MECH ENG 5830	Applied Computational Methods	3
AERO ENG 5830	Applied Computational Methods	3

Applied Analysis Emphasis Area

Required:

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

Engineering Option

Required courses:

CIV ENG 2200	Statics	3
CIV ENG 2210	Mechanics Of Materials	3
Select one of the following:		
MECH ENG 2350	Engineering Mechanics-Dynamics	
MECH ENG 2360	Dynamics	3
Select three of the following:		9
Courses, which have any of the listed courses as prerequisites, may also be used to fulfill this requirement.		
AERO ENG 3613	Aerospace Mechanics I	3
AERO ENG 5313	Intermediate Dynamics of Mechanical and Aerospace Systems	3
AERO ENG 5614	Spaceflight Mechanics	3
CHEM ENG 2100	Chemical Engineering Material & Energy Balances	4
CHEM ENG 2110	Chemical Engineering Thermodynamics I	3
ELEC ENG 2800	Electrical Circuits	3
MECH ENG 3313	Machine Dynamics	3
MECH ENG 2519	Thermodynamics	3
or MECH ENG 2527	Thermal Analysis	
MECH ENG 5131	Intermediate Thermofluid Mechanics *	3
NUC ENG 3103	Interactions Of Radiation With Matter	3

NUC ENG 4203	Reactor Physics I	3
PET ENG 4621	Fundamentals Of Petroleum Reservoir Simulation	3
CIV ENG 3330	Engineering Fluid Mechanics	3
or NUC ENG 3221	Reactor Fluid Mechanics	
or MECH ENG 3131	Thermofluid Mechanics I	
CIV ENG 5207	Computer Methods of Structural Analysis	3
CIV ENG 5333	Intermediate Hydraulic Engineering	3
ELEC ENG 5370	Course ELEC ENG 5370 Not Found	3
MECH ENG 5307	Vibrations I	3
MECH ENG 5211	Introduction To Continuum Mechanics	3
MECH ENG 5234	Stability of Engineering Structures *	3
MECH ENG 5254	Variational Formulations Of Mechanics Problems	3
GEO ENG 4115	Statistical Methods in Geology and Engineering	3
GEOPHYS 3221	Potential Field Theory	3

*

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

Physics Option

Required courses:

PHYSICS 2311	Modern Physics I	3
PHYSICS 3311	Course PHYSICS 3311 Not Found	3
And take at least nine additional hours of physics courses at the 2000 level or above.		9
PHYSICS 2305	Introduction To Modern Physics	3
And take at least twelve additional hours of physics courses at the 2000 level or above.		12

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 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. 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 teacher education website. 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 [120](#) ~~128~~ credit hours. The required courses and a sample four-year program are provided below. (A minimum grade of "C" is required by the department in all mathematics and statistics courses counted toward this degree. No course may be used to satisfy more than one degree requirement, except as otherwise noted.)

Freshman Year			
First Semester	Credits	Second Semester	Credits
MATH 1101	1	MATH 1215 or 1221	4
MATH 1214 or 1211	<u>4</u>	BIO-SCI 1113	3
OR		BIO-SCI 1219 or CHEM 1319 (Science Lab Requirement) ¹	4
MATH 1210 & MATH 1214	-	EDUC 1164	2
CHEM 1100	4	EDUC 1174	2
MATH 1208		PHYSICS 1135	<u>4</u>
ENGLISH 1120	3	PSYCH 1101	3
HISTORY 1300 or 1310	3		
EDUC 1040	2		
EDUC 1104	1		
	14		15
Sophomore Year			
First Semester	Credits	Second Semester	Credits
MATH 2222	4	MATH 3304	3
MATH 3108	3	MATH 3109	3
COMP SCI 1500	3	ENGLISH 1160	3
PHYSICS 1135	4	PHYSICS 2135	4
PHYSICS 2135	<u>4</u>	PSYCH 3310	3
SP&M S 1185	3	STAT 3113 , or 3115 , or 3117	<u>3</u>
	17		15
Junior Year			
First Semester	Credits	Second Semester	Credits
MATH 4209	3	MATH 4211	3
STAT 3113 , or 3115 , or 3117	3	MATH 4530	3
ECON 1100 or 1200	3	EDUC 3280	3
ENGLISH 3170	3	EDUC 3340	3
EDUC 3216	3	Fine Art Elective ²	3
EDUC 3298	1	PSYCH 2300 or EDUC 2102	3
POL SCI 1200	<u>3</u>		
	16		15
Senior Year			
First Semester	Credits	Second Semester	Credits
Electives-Math or Stat ¹	6	EDUC 4298 & EDUC 4299 ³	13
PSYCH 4310 or EDUC 2310	3		

POL SCI 1200	3	
Literature	3	
Electives ⁶	3	
Electives ²	6	
	15	13
Total Credits: 120		

1

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](#).

2

Sufficient free electives to earn a minimum of 120 credit hours.

3

Student Teaching satisfies the capstone requirement for students completing this emphasis area.

4

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

5

~~COMP SCI 1570%7C if not transferred in will require COMP SCI 1580%7C, requiring one extra credit hour which will count either towards technical electives or free electives:~~

6

~~Sufficient free electives to earn a minimum of 120 credit hours.~~

Data Science and Statistics Emphasis Area

Required courses:

STAT 4210	Course STAT 4210 Not Found	<u>3</u>
STAT 5643	Probability And Statistics	3
STAT 5644	Mathematical Statistics	3
STAT 5346	Regression Analysis ²	3
STAT 5353	Statistical Data Analysis (Satisfies Capstone requirement) ¹	3
Select one of the following:		6
STAT 5260	Statistical Data Analysis Using SAS	3
STAT 5814	Applied Time Series Analysis	3
or another approved computational statistics course		
Complete the following CS courses (in addition to those required for all Applied Mathematics majors):		
COMP SCI 1200	Discrete Mathematics for Computer Science ²	3
COMP SCI 1575	Data Structures ²	3
COMP SCI 1585	Data Structures Laboratory ²	1
COMP SCI 2300	File Structures and Introduction to Database Systems ²	3
COMP SCI 2500	Algorithms ²	3
and one of the following two courses:		

COMP SCI 5400	Introduction To Artificial Intelligence ²	3
COMP SCI 5402	Introduction to Data Mining ²	3

1

Satisfies Capstone requirement.

2

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

These changes reduce the Applied Mathematics degree from 128 credit hours to 120 credit hours without reducing the mathematical and statistical integrity of the degree program. They also clean up the degree to reduce the need for common sub/waiver forms (particularly those involving our students double majoring in math along with either Comp Sci or Physics). It cleans up our Calculus I requirement to match what is being done in other degree programs. It also ensures alignment with up-to-date state requirements for the secondary education emphasis.

The more substantive change is to the old Statistics emphasis area, which is being renamed to Data Science and Statistics. The approval from the state is attached, with lengthy justification for the change. We are including a new course, STAT 4210, as a required course in this emphasis area, and a separate CC form is pending to get this permanent course number. Our current plan is to offer STAT 4210 every spring, and in addition to being required for the emphasis area, this will be a very appropriate course for students wishing to complete a mathematics minor. We expect this to be a very popular emphasis area and are excited about the growth potential it brings to our department.

Supporting Documents

[MS&T PC July 2021.pdf](#)

[Program Change \(PC\) Form BS Applied Math.pdf](#)

Course Reviewer Comments

tibbettsmg (04/13/22 12:13 pm): corrected physics option to 12 hrs per email from PRunnion on 4.12.22. MR

Key: 142

Program Change Request

Date Submitted: 04/05/22 4:45 pm

Viewing: **BIO SC-BA : Biological Sciences BA**

File: 146.32

Last approved: 06/10/21 4:06 pm

Last edit: 04/11/22 11:55 am

Changes proposed by: shannonk

Catalog Pages Using this Program

[Biological Sciences](#)

Start Term

Fall ~~2022~~ 2021

Program Code

BIO SC-BA

Department

Biological Sciences

Title

Biological Sciences BA

Program Requirements and Description

In Workflow

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

Approval Path

1. 04/05/22 4:45 pm
David Duvernell
(duvernell):
Approved for
RBIOLSCI Chair
2. 04/11/22 11:55 am
Marita Raper
(tibbetmsg):
Approved for CCC
Secretary
3. 04/18/22 4:06 pm
Katie Shannon
(shannonk):
Approved for
Sciences DSCC
Chair

History

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

4. Jun 28, 2017 by
Katie Shannon
(shannonk)
5. Nov 14, 2017 by
Katie Shannon
(shannonk)
6. Jun 18, 2018 by
Katie Shannon
(shannonk)
7. Jul 1, 2020 by Katie
Shannon
(shannonk)
8. Feb 3, 2021 by
Katie Shannon
(shannonk)
9. Jun 10, 2021 by
Katie Shannon
(shannonk)

Bachelor of Arts Biological Sciences Degree Requirements

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

Core Courses		
BIO SCI 1201	Biological Sciences Freshman Seminar	1
BIO SCI 1113	General Biology	3
or BIO SCI 1213	Principles of Biology	
BIO SCI 1219	General Biology Lab	1
BIO SCI 1223	Biodiversity	3
BIO SCI 1229	Biodiversity Lab	1
BIO SCI 2213	Cell Biology	3
BIO SCI 2219	Cell Biology Laboratory	1
BIO SCI 2223	General Genetics	3
BIO SCI 2263	Ecology	3
BIO SCI 3233	Evolution	3
BIO SCI 4010	Seminar	1
Advanced courses, 2000 level or higher (at least one with laboratory and one 3000 or 4000 level)		9
Chemistry		

CHEM 1310 & CHEM 1319 & CHEM 1320 & CHEM 1100	General Chemistry I and General Chemistry Laboratory and General Chemistry II and Introduction To Laboratory Safety & Hazardous Materials	9
CHEM 2210 & CHEM 2220	Organic Chemistry I and Organic Chemistry II	6
Mathematics & Physical Science		
Various courses in mathematics, physics, and/or geology chosen in consultation with academic advisor. (Note: Proficiency in College Algebra must be demonstrated by a grade of "C" or better in a College Algebra course or by examination)		9
Computer Science/Statistics (Select one of the following:)		3-4
COMP SCI 1570 & COMP SCI 1580	Introduction To C++ Programming and Introduction To Programming Laboratory	
or COMP SCI 1971 & COMP SCI 1981	Introduction To Programming Methodology and Programming Methodology Laboratory	
STAT 3111	Statistical Tools For Decision Making	
STAT 3425	Introduction to Biostatistics	4
General Requirements for BA		
English Composition		6
ENGLISH 1120	Exposition And Argumentation	
One additional composition course		
Western Civilizations		6
HISTORY 1100	Early Western Civilization	
HISTORY 1200	Modern Western Civilization	
Foreign Language (three semesters of a foreign language)		12
Humanities (including one class in each of literature, philosophy, and fine arts)		12
Social Sciences (including classes in two of the following three subjects: economics, political science, psychology)		12

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

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

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

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

PHYSICS 2145	College Physics II
or PHYSICS 2135	Engineering Physics II

The following classes are highly recommended:

BIO SCI 3333	Human Anatomy and Physiology I	3
BIO SCI 3339	Human Anatomy Physiology I Lab	1
BIO SCI 3343	Human Anatomy and Physiology II	3
BIO SCI 3349	Human Anatomy and Physiology II Laboratory	1
CHEM 4610	General Biochemistry	3
PREMED 3010	Communication Workshop for the Pre-Health Student	<u>1</u>

Bachelor of Arts Biological Sciences Secondary Education Emphasis Area Degree Requirements

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

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

In order to successfully complete this emphasis area, students must attain at least a 3.0 GPA average for all biology courses and professional education courses required by the Missouri Department of Elementary and Secondary Education for teacher certification. Students must also meet all requirements listed under the teacher education website including passing the state-required assessments.

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

Humanities: 18 semester hours		
ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 1160	Writing And Research	3
or ENGLISH 3560	Technical Writing	
SP&M S 1185	Principles Of Speech	3
At least one course in each of the following: Literature, Philosophy and Fine Arts		
Social Sciences: 15 semester hours		
HISTORY 3530	History of Science	3
HISTORY 1100	Early Western Civilization	3
HISTORY 1200	Modern Western Civilization	3
POL SCI 1200	American Government	3
PSYCH 1101	General Psychology	3
Mathematics/Physical Science: 9 semester hours		

MATH 1103	Fundamentals Of Algebra	3
PHYSICS 1145	College Physics I	3
or PHYSICS 1505	Introductory Astronomy	
GEOLOGY 1110	Physical And Environmental Geology	3
Computer Science/Statistics: 3 semester hours		
3 semester hours of Computer Science or Statistics		3
Chemistry: 17 semester hours		
CHEM 1310 & CHEM 1319 & CHEM 1320 & CHEM 1100	General Chemistry I and General Chemistry Laboratory and General Chemistry II and Introduction To Laboratory Safety & Hazardous Materials	9
CHEM 2210 & CHEM 2220	Organic Chemistry I and Organic Chemistry II	6
Biological Sciences: 27 semester hours		
BIO SCI 1201	Biological Sciences Freshman Seminar	1
BIO SCI 1213	Principles of Biology	3
or BIO SCI 1113	General Biology	
BIO SCI 1219	General Biology Lab	1
BIO SCI 1223 & BIO SCI 1229	Biodiversity and Biodiversity Lab	4
BIO SCI 1173	Introduction to Environmental Sciences	3
BIO SCI 2213 & BIO SCI 2219	Cell Biology and Cell Biology Laboratory	4
BIO SCI 2223	General Genetics	3
BIO SCI 2263	Ecology	3
BIO SCI 3233	Evolution	3
BIO SCI 4010	Seminar	1
Education: 42 semester hours		
EDUC 1040	Perspectives In Education	2
EDUC 1104	Teacher Field Experience I	1
EDUC 1164	Teacher Field Experience II	2
EDUC 1174	School Organization and Administration For Teachers	2
EDUC 2310	Education Of The Exceptional Child	3
EDUC 3216	Instructional Literacy in the Content Area	3
EDUC 3280	Instructional Strategies in the Content Area	3
EDUC 3298	Teacher Field Experience III	1
EDUC 3340	Assessment of Student Learning	3
EDUC 4298	Student Teaching Seminar	1
EDUC 4299	Student Teaching	12

ENGLISH 3170	Teaching And Supervising Reading and Writing	3
PSYCH 2300/EDUC 2102	Educational Psychology	3
PSYCH 3310	Developmental Psychology	3

Justification for request

Number of Physics hours now 8 total, not 8-10. Added PREMED 3010 to recommended courses

Supporting Documents

Course Reviewer Comments

tibbettsmg (04/11/22 11:55 am): updated effective term to FS22. MR

Key: 146

Program Change Request

Date Submitted: 04/05/22 4:50 pm

Viewing: **BIO SC-BS : Biological Sciences BS**

File: 147.20

Last approved: 02/03/21 10:51 am

Last edit: 04/05/22 4:50 pm

Changes proposed by: shannonk

Catalog Pages Using this Program

[Biological Sciences](#)

Start Term

Fall ~~2021~~ 2022

Program Code

BIO SC-BS

Department

Biological Sciences

Title

Biological Sciences BS

Program Requirements and Description

In Workflow

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

Approval Path

1. 04/06/22 8:02 am
David Duvernell (duvernell):
Approved for
RBIOLSCI Chair
2. 04/12/22 11:41 am
Marita Raper (tibbetmsg):
Approved for CCC
Secretary
3. 04/18/22 4:06 pm
Katie Shannon (shannonk):
Approved for
Sciences DSCC
Chair

History

1. Aug 1, 2014 by
Katie Shannon (shannonk)
2. Feb 1, 2016 by
Ilene Morgan (imorgan)
3. Jun 18, 2018 by
Katie Shannon

- (shannonk)
 4. Jan 30, 2020 by
 Katie Shannon
 (shannonk)
 5. Apr 28, 2020 by
 Katie Shannon
 (shannonk)
 6. Feb 3, 2021 by
 Katie Shannon
 (shannonk)

Bachelor of Science Biological Sciences Degree Requirements

A minimum of 124 credit hours is required for a Bachelor of Science degree in Biological Science.

A minimum grade of "C" is required for each Biological Science course used to fulfill the B.S. degree requirements.

These requirements for the B.S. degree are in addition to credit that is received for basic ROTC.

The Biological Science B.S. degree must include 48 semester hours of biological sciences course work, to include:

BIO SCI 1201	Biological Sciences Freshman Seminar	1
BIO SCI 1113	General Biology	3
or BIO SCI 1213	Principles of Biology	
BIO SCI 1219	General Biology Lab	1
BIO SCI 1223	Biodiversity	3
BIO SCI 1229	Biodiversity Lab	1
BIO SCI 2213	Cell Biology	3
BIO SCI 2219	Cell Biology Laboratory	1
BIO SCI 2223	General Genetics	3
BIO SCI 2263	Ecology	3
BIO SCI 3233	Evolution	3
BIO SCI 4010	Seminar	1
Advanced biological sciences or approved course work in other departments for a total of 48 credit hours of biology-related classes to include at least one laboratory course from the following:		25
BIO SCI 3319	Microbiology Lab	
or BIO SCI 3339	Human Anatomy Physiology I Lab	
or BIO SCI 3349	Human Anatomy and Physiology II Laboratory	
or BIO SCI 4329	Molecular Genetics Laboratory	
19 semester hours of chemistry to include general chemistry		19

<u>17 semester hours of chemistry to include general chemistry</u>		<u>17</u>
CHEM 1310 & CHEM 1319 & CHEM 1320 & CHEM 1100	General Chemistry I and General Chemistry Laboratory and General Chemistry II and Introduction To Laboratory Safety & Hazardous Materials	
CHEM 2210 & CHEM 2219 & CHEM 2220 & CHEM 2229	Organic Chemistry I and Organic Chemistry I Lab and Organic Chemistry II and Organic Chemistry II Lab	
2 semesters of College (Engineering) Physics and labs		8
PHYSICS 1145	College Physics I	
or PHYSICS 1135	Engineering Physics I	
PHYSICS 2145	College Physics II	
or PHYSICS 2135	Engineering Physics II	
Math and Statistics		8
MATH 1208	Calculus With Analytic Geometry I	
or MATH 1214	Calculus I	
or MATH 1212	Survey of Calculus	
STAT 3425	Introduction to Biostatistics	4
MATH 1211	Calculus I-B	<u>4</u>
or MATH 1212	Survey of Calculus	
or MATH 1214	Calculus I	
12 semester hours of humanities, excluding foreign language, and to include:		12
ENGLISH 1120 & ENGLISH 1160	Exposition And Argumentation and Writing And Research (entering students will normally take ENGLISH 1120 either semester of the first year)	
9 hours of social sciences, to include		9
HISTORY 1200	Modern Western Civilization (or equivalent)	
or HISTORY 1300	American History To 1877	
or HISTORY 1310	American History Since 1877	
or POL SCI 1200	American Government	
Total Credits		110

Elective credits: In consultation with his or her advisor, each student will elect sufficient additional courses to complete a minimum of 124 credit hours.

Justification for request

Total Chemistry hours changed to 17 in 2020 but not reflected in description. Removed Math 1208 and added Math 1211, total Math hours now 8 instead of 8-9

Supporting Documents

Course Reviewer Comments

Program Change Request

Date Submitted: 04/18/22 4:32 pm

Viewing: **CHEM-BS : Chemistry BS**

File: 16.36

Last approved: 06/10/21 4:07 pm

Last edit: 04/18/22 4:32 pm

Changes proposed by: tschuman

Catalog Pages Using this Program

[Chemistry](#)

Start Term

Fall 2022 ~~2021~~

Program Code

CHEM-BS

Department

Chemistry

Title

Chemistry BS

Program Requirements and Description

In Workflow

1. **RCHEMIST 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. kristyng

Approval Path

1. 04/07/22 9:41 am
Rainer Glaser
(GlaserR): Rollback to Initiator
2. 04/08/22 8:27 am
Rainer Glaser
(GlaserR):
Approved for
RCHEMIST Chair
3. 04/13/22 3:16 pm
Marita Raper
(tibbettsmg):
Rollback to Initiator
4. 04/18/22 5:14 pm
Rainer Glaser
(GlaserR):
Approved for
RCHEMIST Chair
5. 04/19/22 11:09 am
Marita Raper
(tibbettsmg):
Approved for CCC
Secretary

History

1. Apr 28, 2014 by

- Thomas Schuman
(tschuman)
2. Jun 19, 2015 by
woelk (woelkk)
 3. Jun 28, 2017 by
Thomas Schuman
(tschuman)
 4. May 3, 2018 by
Thomas Schuman
(tschuman)
 5. Dec 3, 2019 by
Thomas Schuman
(tschuman)
 6. Sep 2, 2020 by
Crystal Wilson
(wilsoncry)
 7. Jun 10, 2021 by
Thomas Schuman
(tschuman)

Bachelor of Science Chemistry

A minimum of 127 credit hours is required for a Bachelor of Science degree in Chemistry and an average of at least two grade points per credit hour must be obtained. These requirements for the B.S. degree are in addition to credit received for algebra, trigonometry, and basic ROTC.

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

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1310	4	CHEM 1320	3
CHEM 1319	1	CHEM 1510	2
CHEM 1100	1	MATH 1215	4
CHEM 1110	1	Electives	6
MATH 1214 or 1210 <i>and</i> 1211	4		
ENGLISH 1120	3		
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3		
	17		15
Sophomore Year			
First Semester	Credits	Second Semester	Credits

CHEM 2210	3	CHEM 2220	3
CHEM 2219	1	CHEM 2229	1
MATH 2222	4	CHEM 3410	3
PHYSICS 1135	4	PHYSICS 2135	4
Electives	4	Select one of the following sequences:	3
		COMP SCI 1972 & COMP SCI 1982	
		IS&T 1561 or COMP SCI 1500	
		COMP SCI 1971 & COMP SCI 1981	
	16		14
Junior Year			
First Semester	Credits	Second Semester	Credits
CHEM 2310	3	CHEM 2319	1
CHEM 2510	4	CHEM 2320	3
CHEM 3430	3	CHEM 3420	3
STAT 3113 or 3115	3	CHEM 3459	2
ENGLISH 1160 or 3560	3	Electives	6
	16		15
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 3510	4	CHEM 4010	1
CHEM 4010 or 4099	4	CHEM 4297	3
CHEM 4099	<u>1-3</u>	Electives	12
CHEM 4610	3		
CHEM 4810	3		
Electives	7		
	18-20		16
Total Credits: 127-129			

Notes:

Grade Requirements: A minimum grade of "C" is required for each chemistry course counted towards the degree.

ROTC: Basic ROTC may be taken in the freshman and sophomore year, but does not count towards the degree.

Electives: There are thirty-three (33) hours of electives, not to include Math courses that are prerequisite to calculus. Twelve (12) hours must be 2xxx, 3xxx, 4xxx (or 5xxx or higher with permission) level in chemistry, to include up to a maximum ~~chemistry or another technical area with permission~~ of 9 credit hours of Chem 4099, or another technical area with permission of department. Six (6) elective hours must be completed in the social sciences. Six (6) elective hours are required in the humanities.

Chemistry

Biochemistry Emphasis Area

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1310	4	CHEM 1320	3
CHEM 1319	1	CHEM 1510	2
CHEM 1100	1	MATH 1215	4
CHEM 1110	1	BIO SCI 2213	3
ENGLISH 1120	3	BIO SCI 2219	1
MATH 1214 or 1210 and 1211	4	Electives	3
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3		
	17		16
Sophomore Year			
First Semester	Credits	Second Semester	Credits
CHEM 2210	3	CHEM 2220	3
CHEM 2219	1	CHEM 2229	1
MATH 2222	4	CHEM 3410	3
PHYSICS 1135	4	PHYSICS 2135	4
Electives	4	Select one of the following sequences:	3
		COMP SCI 1972 & COMP SCI 1982	
		IS&T 1561 or COMP SCI 1500	
		COMP SCI 1971 & COMP SCI 1981	
	16		14
Junior Year			
First Semester	Credits	Second Semester	Credits
CHEM 2310	3	CHEM 2319	1
CHEM 3430	3	CHEM 2320	3
CHEM 4610	3	CHEM 2510	4
CHEM 4619	2	CHEM 3420	3
STAT 3113 or 3115	3	CHEM 3459	2
ENGLISH 1160 or 3560	3	CHEM 4620	3
	17		16
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 3510	4	CHEM 4010	1

CHEM 4010 or 4099	4	CHEM 4297	3
CHEM 4099	<u>1-3</u>	Electives	12
CHEM 4810	3		
CHEM 4630	3		
Electives	4		
	15-17		16
Total Credits: 127-129			

Notes:

Grade Requirements: A minimum grade of "C" is required for each chemistry course counted towards the degree.

ROTC: Basic ROTC may be taken in the freshman and sophomore years, but does not count towards the degree.

Electives: There are twenty-one (21) hours of electives, ~~not to include up to~~ ~~include Math courses that are prerequisite~~ to twelve (12) hours must be 2xxx, 3xxx, 4xxx (or 5xxx or higher with permission) level in chemistry, to include up to a maximum of 9 credit hours of Chem 4099 or another technical area with permission of department, not to include Math courses that are prerequisite to calculus. Six (6) elective hours must be completed in the social sciences. Six (6) elective hours are required in the humanities.

Polymer & Coatings Science Emphasis Area

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1310	4	CHEM 1320	3
CHEM 1319	1	CHEM 1510	2
CHEM 1100	1	MATH 1215	4
CHEM 1110	1	Electives	6
MATH 1214 or 1210 and 1211	4		
ENGLISH 1120	3		
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3		
	17		15
Sophomore Year			
First Semester	Credits	Second Semester	Credits
CHEM 2210	3	CHEM 2220	3
CHEM 2219	1	CHEM 2229	1
MATH 2222	4	CHEM 2319	1
PHYSICS 1135	4	CHEM 3410	3
CHEM 2310	3	PHYSICS 2135	4
		Select one of the following sequences:	3
		COMP SCI 1972 & COMP SCI 1982	

[IS&T 1561](#) or [COMP SCI 1500](#)

[COMP SCI 1971](#)
& [COMP SCI 1981](#)

15

15

Junior Year

First Semester	Credits	Second Semester	Credits
CHEM 2510	4	CHEM 2320	3
CHEM 3430	3	CHEM 3420	3
CHEM 4810	3	CHEM 3459	2
STAT 3113 or 3115	3	CHEM 4099	1-3
ENGLISH 1160 or 3560	3	CHEM 4819	1
		CHEM 4850	3
		Elective	3
	16		16-18
First Semester	Credits	Second Semester	Credits
CHEM 3510	4	CHEM 4297	3
CHEM 4610	3	CHEM 4099	1-3
PHYSICS 4523	3	Electives	12
CHEM 4099	1-3		
Electives	6		
	17-19		16-18
Total Credits: 127-133			

Notes:

Grade Requirements: A minimum grade of "C" is required for each chemistry course counted towards the degree.

ROTC: Basic ROTC may be taken in the freshman and sophomore years, but does not count towards the degree.

Undergraduate Research: The undergraduate research CHEM 4099 must be done in Polymers and Coatings Science.

Electives: There are twenty-three (23) hours of electives, including twelve (12) hours must be 2xxx, 3xxx, 4xxx (or 5xxx or higher with permission) level in chemistry, not to include up ~~include Math courses that are prerequisite~~ to a maximum of 9 credit hours of Chem 4099 or another technical area with permission of department, not to include Math courses that are prerequisite to calculus. Six (6) elective hours must be completed in the social sciences. Six (6) elective hours are required in the humanities.

Pre-medicine Emphasis Area

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1310	4	CHEM 1320	3

CHEM 1319	1	CHEM 1510	2
CHEM 1100	1	MATH 1215	4
CHEM 1110	1	BIO SCI 1113	3
MATH 1214 or 1210 <i>and</i> 1211	4	BIO SCI 1219	1
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3	ENGLISH 1120	3
	14		16
Sophomore Year			
First Semester	Credits	Second Semester	Credits
CHEM 2210	3	CHEM 2220	3
CHEM 2219	1	CHEM 2229	1
MATH 2222	4	CHEM 3410	3
PHYSICS 1135	4	PHYSICS 2135	4
BIO SCI 2213	3	Select one of the following sequences:	3
BIO SCI 2219	1	COMP SCI 1972 & COMP SCI 1982	
		IS&T 1561 or COMP SCI 1500	
		COMP SCI 1971 & COMP SCI 1981	
	16		14
Junior Year			
First Semester	Credits	Second Semester	Credits
CHEM 3430	3	CHEM 2510	4
CHEM 4610	3	CHEM 3420	3
CHEM 4619	2	CHEM 4620	3
CHEM 4010 or 4099	1	STAT 3113 or 3115	3
BIO SCI 3333	3	BIO SCI 3343	3
BIO SCI 3339	1	BIO SCI 3349	1
ENGLISH 1160 or 3560	3		
	16		17
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 2310	3	CHEM 2319	1
CHEM 3510	4	CHEM 2320	3
CHEM 3459	2	CHEM 4099	1
CHEM 4010 or 4099	1	CHEM 4297	3
CHEM 4810	3	Electives	9
Electives	4		

17

17

Total Credits: 127

Notes:

Grade Requirements: A minimum grade of "C" is required for each chemistry course counted towards the degree.

ROTC: Basic ROTC may be taken in the freshman and sophomore years, but does not count towards the degree.

Electives: There are eleven (11) hours of electives, not to include Math courses that are prerequisite to calculus. ~~calculus. Three (3) elective hours must be completed in the social sciences.~~ Up to five (5) credit hours may be taken of Chem 4099. Three (3) elective hours must be completed in the social sciences. Three (3) elective hours are required in the humanities.

Justification for request

We are increasing the amount of research hours in chemistry 4099 that will count toward undergraduate degree credit from 6 to maximum of 9, which includes a change to the course description of chem 4099.

Supporting Documents

Course Reviewer Comments

glaserr (04/07/22 9:41 am): Rollback: Start date FS22**tibbettsmg (04/13/22 3:16 pm):** Rollback: rollback per email. MR

Key: 16

Program Change Request

Date Submitted: 04/04/22 1:33 pm

Viewing: **CMP SC-BS : Computer Science BS**

File: 28.67

Last approved: 10/01/21 2:58 pm

Last edit: 04/04/22 1:33 pm

Changes proposed by: zhupe

Catalog Pages Using this Program

[Computer Science](#)

Start Term

[Fall 2022](#) [Spring 2024](#)

Program Code

CMP SC-BS

Department

Computer Science

Title

Computer Science BS

Program Requirements and 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. **kristyg**

Approval Path

1. 04/04/22 1:48 pm
Samuel Frimpong (frimpong):
Approved for RCOMPSCI Chair
2. 04/05/22 9:55 am
Marita Raper (tibbetmsg):
Approved for CCC Secretary
3. 04/19/22 9:04 am
Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Aug 5, 2014 by Daniel Tauritz (tauritzd)
2. Aug 13, 2014 by pantaleoa
3. Jun 19, 2015 by Daniel Tauritz (tauritzd)
4. Jul 15, 2015 by

- [pantaleoa](#)
- 5. Jun 28, 2017 by Daniel Tauritz (tauritzd)
- 6. Jun 14, 2019 by Daniel Tauritz (tauritzd)
- 7. Mar 3, 2020 by ershenb
- 8. Oct 28, 2020 by Marita Raper (tibbettsmg)
- 9. Oct 1, 2021 by Crystal Wilson (wilsoncry)

For the

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

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

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

Sample Course of Study

Freshman Year			
First Semester	Credits	Second Semester	Credits
FR ENG 1100	1	COMP SCI 1200	3
COMP SCI 1500 ¹	3	COMP SCI 1570	3
Laboratory Science Elective ²	5	COMP SCI 1580	1

MATH 1214 or 1211 ³	4	MATH 1215 ⁴	4
ENGLISH 1120	3	ENGLISH 1160 or 3560	3
		Humanities / Social Science Elective ⁵	3
	16		17
Sophomore Year			
First Semester	Credits	Second Semester	Credits
COMP SCI 1575	3	COMP SCI 2200	3
COMP SCI 1585	1	COMP SCI 2500	3
COMP ENG 2210 ⁶	3	PHYSICS 2135 ⁹	4
PHYSICS 1135 ⁷	4	COMP ENG 3150 ⁶	3
Statistics Elective ⁸	3	Literature Elective¹⁰	3
Humanities / Social Science Elective ⁵	3	COMP SCI 3800	<u>3</u>
	17		16
Junior Year			
First Semester	Credits	Second Semester	Credits
COMP SCI 2300	3	COMP SCI 3500	3
COMP SCI 3800	3	COMP SCI 3610	3
COMP SCI 3610	<u>3</u>	Cmp Sc Elective ^{12, 16}	3
MATH 3108	3	Cmp Sc Elective ^{12, 16}	<u>3</u>
Humanities / Social Science Elective ⁵	3	Sci/Eng Elective ¹³	3
Ethics Elective ¹¹	3	SP&M S 1185 ¹⁴	3
	15		15
Senior Year			
First Semester	Credits	Second Semester	Credits
COMP SCI 4090	3	COMP SCI 4091	3
COMP SCI 4610	3	Cmp Sc Electives ^{12, 16}	3
Cmp Sc Electives ^{12, 16}	6	Humanities / Social Science Elective ⁵	3
Sci/Eng Elective ¹³	3	Free Elective ^{15,16}	8
	15		17
Total Credits: 128			

1

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

2

An approved science lecture-laboratory course pair totaling at least four credit hours. The laboratory is mandatory in all cases. The approved course pairs are: [CHEM 1310](#) and [CHEM 1319](#); [PHYSICS 1505](#) and [PHYSICS 1509](#); [PHYSICS 1605](#) and [PHYSICS 1609](#); [GEOLOGY 1120](#) and [GEOLOGY 1129](#); [BIO SCI 1113](#) and [BIO SCI 1219](#); [BIO SCI 1223](#) and [BIO SCI 1229](#); [BIO SCI 2213](#) and [BIO SCI 2219](#); [BIO SCI 2353](#) and [BIO SCI 2359](#); [BIO SCI 2383](#) and [BIO SCI 2389](#).

3

Or [MATH 1208](#).

4

Or [MATH 1221](#).

5

Any nine credit hours of social science courses and three credit hours of humanities courses on the approved lists maintained on the computer science website. One course must satisfy the Missouri and U.S. Constitution requirement. [COMP SCI 4700](#) may be counted as a Social Science elective.

6

Laboratory not required.

7

Or both [PHYSICS 1111](#) and [PHYSICS 1119](#).

8

One of [STAT 3113](#), [STAT 3115](#), [STAT 3117](#), or [STAT 5643](#).

9

Or both [PHYSICS 2111](#) and [PHYSICS 2119](#).

10

One literature course on the approved list maintained on the computer science website.

11

One of [PHILOS 3225](#), [PHILOS 3235](#), [PHILOS 4340](#), or [PHILOS 4368](#).

12

Fifteen hours of elective COMP SCI courses excluding [COMP SCI 2002](#), [COMP SCI 4700](#), COMP SCI 2001 - Domain Exploration and Innovation Methods, COMP SCI 3001 - Skill Development for Entrepreneurs and Innovators, COMP SCI 4001 - Advanced Domain Exploration and Innovation Methods, COMP SCI 4001 - Interpersonal Dynamics for Entrepreneurs and Innovators, and all COMP SCI x9xx courses. At least nine hours must be 5000-level or higher. At least nine hours must be lecture courses.

13

Any six hours chosen from departments that offer a degree associated with either the Discipline Specific Curricula Committee for Sciences or the Discipline Specific Curricula Committee for Engineering, excluding Computer Science. The following courses are also excluded: all 1000-level MATH courses, all STAT courses below 4000-level, all 11xx-level Physics courses, [PHYSICS 2111](#), [PHYSICS 2119](#), [PHYSICS 2135](#), and [PHYSICS 2145](#).

14

[SP&M S 1185](#) or [SP&M S 3245](#) or [THEATRE 3245](#) or one of the two complete four-course sequences in Advanced ROTC ([MIL ARMY 3250](#), [MIL ARMY 3500](#), [MIL ARMY 4250](#), and [MIL ARMY 4500](#); or [MIL AIR 3110](#), [MIL AIR 3120](#), [MIL AIR 4110](#) and [MIL AIR 4120](#)).

15

Courses chosen from any discipline so that 128 hours are completed. These and only these courses may be taken pass/fail and only one course may be taken pass/fail each semester. The following courses are excluded: all 1000-level MATH courses, all STAT courses below 4000-level, all 11xx-level Physics courses, [PHYSICS 2111](#), [PHYSICS 2119](#), [PHYSICS 2135](#), [PHYSICS 2145](#), any COMP SCI x9xx courses, and the first two years of ROTC.

16

[COMP SCI 4010](#) can be counted as Computer Science Elective or Free Elective, limited to three times.

Justification for request

1. Adding Math 1211 as requested by campus.
2. Removing reference to Freshmen Engineering.
3. All 1000-level Physics courses exclude in Sci/Eng elective and free elective which includes PHYSICS 1505 Introductory Astronomy. We change 1000-level Physics courses to 11##-level Physics courses to exclude Physics 1111, 1119, 1135, and 1145.
4. We have more HSS than needed in the degree, and too few CS electives (only 12 credits for CS electives). We have English course (English 1160 or 3560) (3credits), 12 credits for Humanity&Social Science, one ethics elective (3 credits), one speech (3 credits), and one literature (3 credits). Our humanity requirement already permits literature courses. We currently exceed the 21-hour

requirement, with our 24 hours of HSS. So we eliminating literature (3 credits) and adding 3 more credits to CS elective.

5. Move up CS3800. The prerequisites of CS3800 are Comp Sci 1575 and Comp Eng 2210. Also move up CS3610 to keep that pre-req chain moving.

Supporting Documents

Course Reviewer Comments

Key: 28

Program Change Request

Date Submitted: 04/08/22 10:21 am

Viewing: **EDUC-BS : Education BS**

File: 344.27

Last approved: 04/07/22 3:51 pm

Last edit: 04/13/22 1:49 pm

Changes proposed by: bakm75

Catalog Pages Using this Program

[Education](#)

Start Term

Fall 2022

Program Code

EDUC-BS

Department

Teacher Education and Certification

Title

Education BS

Program Requirements and Description

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. 04/08/22 10:22 am
Beth Kania-Gosche (bkaniagosche):
Approved for REDUCATION Chair
2. 04/13/22 1:49 pm
Marita Raper (tibbettsmg):
Approved for CCC Secretary
3. 04/13/22 3:39 pm
Cecil Eng Huang Chua (cchua):
Approved for Social Sciences DSCC Chair

History

1. Jun 10, 2021 by Beth Kania-Gosche (bkaniagosche)
2. Aug 3, 2021 by Crystal Wilson

(wilsoncry)

3. Apr 7, 2022 by Beth

Kania-Gosche

(bkaniagosche)

Bachelor of Science in Education

Overview

The Department of Teacher Education and Certification offers a degree in education with options for emphases in early childhood (birth-grade 3), elementary (grades 1-6), middle school language arts, middle school mathematics, middle school science, or middle school social science. The educational studies emphasis area offers an option for students working in informal contexts outside of public schools. ~~science.~~

All students take the core education curriculum; these courses include multiple field experience courses which requires them to observe and teach lessons in schools. The final semester of the program is student teaching when students are immersed full time in a school setting for 16 weeks, except for the educational studies emphasis area. ~~weeks.~~

The Missouri Department of Elementary and Secondary Education approves the curricula of certification ~~these~~ programs. Any substitutions for content or education coursework must be approved by the Department of Teacher Education and Certification. Students intended to earn a teaching certificate must also pass the Missouri Content Assessment and meet the GPA requirements to ~~to~~ be eligible for ~~for~~ student teaching ~~teaching~~ and certification.

Program Learning Outcomes

The program learning outcomes are the Missouri Teacher Standards. These are the same standards principals use to evaluate practicing teachers in Missouri. These outcomes are assessed throughout the program and in the student teaching experience; students must demonstrate evidence of satisfactory progress on each outcome.

Missouri S&T education program graduates will . . .

1. Create learning experiences that make the central concepts, structures, and tools of inquiry of the discipline(s) of subject matter meaningful and engaging for all students.
2. Provide learning opportunities that are adapted to diverse learners and support the intellectual, social, and personal development of all students.
3. Develop, implement, and evaluate curriculum based upon student, district and state standards
4. Use a variety of instructional strategies and resources to encourage students' critical thinking, problem solving, and performance skills
5. Create a learning environment that encourages active engagement in learning, positive social interaction, and self-motivation.
6. Model effective verbal, nonverbal, and media communication techniques with students, colleagues and families to foster active inquiry, collaboration, and supportive interaction in the classroom.
7. Monitor the performance of each student through formative and summative assessment strategies, and devises instruction to enable students to grow and develop, making adequate academic progress.

8. Continually assess the effects of choices and actions on others and seek out opportunities to grow professionally.

9. Have effective working relationships with students, parents, school colleagues, and community members

Core Curriculum

EDUC 1040	Perspectives In Education	2
EDUC 1104	Teacher Field Experience I	1
EDUC 1164	Teacher Field Experience II	2
EDUC 1174	School Organization and Administration For Teachers	2
EDUC 2102	Educational Psychology	3
or PSYCH 2300	Educational Psychology	
EDUC 2310	Education Of The Exceptional Child	3
or PSYCH 4310	Psychology Of The Exceptional Child	
EDUC 3216	Instructional Literacy in the Content Area	3
EDUC 3340	Assessment of Student Learning	3
PSYCH 3310	Developmental Psychology	3
EDUC 4298	Student Teaching Seminar	1
EDUC 4299	Student Teaching	12
Total Credits		35

Emphasis Area: Educational Studies

This emphasis is for students who want to work in educational settings outside of K-12 public schools. Potential career settings include nonprofit organizations, state agencies, childcare, museums, youth development, and more. This flexible emphasis area is designed to combine educational theories with applications in informal educational environments and does not result in teacher certification.

Students must complete the general education requirements and the education core curriculum (35 credit hours) with the exception of student teaching, which should be substituted with additional education courses aligned to the student's career goals. Each student will elect sufficient additional courses to complete a minimum of 120 credit hours; these may be in other disciplines. As this degree does not result in certification, students are not required to meet Missouri Department of Elementary and Secondary Education requirements.

Students must complete the following general education requirements. Substitutions are allowable but must be approved by the department chair.

Students must take the following nine hours of coursework:

ENGLISH 1120	Exposition And Argumentation	<u>3</u>
ENGLISH 1160	Writing And Research	<u>3</u>
SP&M S 1185	Principles Of Speech	<u>3</u>

Math and Sciences. Students must take **18 hours of math and science courses**, including at least one in biological science and one in the physical sciences and at least one math course. In addition to these requirements, students may count STAT 1115, up to 3 hours from psychology classes, and up to 3 hours from history of science and technology classes (HISTORY 2510, HISTORY 3510, or HISTORY 3530), but may not use them to satisfy another requirement.

Humanities. Students must complete 9 hours in humanities with at least one course from each of the following: literature, philosophy, and fine arts (Art, Music, or Theater Appreciation).

Social Sciences. Students must complete 12 hours in social science courses. Students must take at least one course in two of these four areas: economics, history, political science, and psychology.

One of the following courses must be taken to satisfy the requirement of the state of Missouri (the "Williams Law"); this course may count toward fulfilling the social sciences requirement.

<u>HISTORY 1200</u>	<u>Modern Western Civilization</u>	<u>3</u>
<u>HISTORY 1300</u>	<u>American History To 1877</u>	<u>3</u>
<u>HISTORY 1310</u>	<u>American History Since 1877</u>	<u>3</u>
<u>POL SCI 1200</u>	<u>American Government</u>	<u>3</u>

~~Early Childhood An early childhood certificate allows students to teach children from birth through third grade in the state of Missouri. Students must take the following general education courses. Substitutions must be approved by the department chair. Students must also take a literature course.~~ Emphasis Area: Early Childhood

An early childhood certificate allows students to teach children from birth through third grade in the state of Missouri.

<u>EDUC 1055</u>	Introduction to Early Childhood Education	3
<u>EDUC 1221</u>	Health, Nutrition, and Safety in Early Childhood Education	3
<u>EDUC 1820</u>	Early Childhood Program Management	3
<u>EDUC 2401</u>	School, Family, and Community Partnerships	3
<u>EDUC 2440</u>	Observation and Assessment of Young Children	3
<u>EDUC 3203</u>	Introduction to STEM Education	3
<u>EDUC 3215</u>	Teaching Reading in Elementary and Early Childhood Settings	3
<u>EDUC 3217</u>	Analysis and Correction of Reading Difficulties	3
<u>EDUC 3218</u>	Language Arts for Elementary and Early Childhood Teachers	3
<u>EDUC 3220</u>	Teaching Science in the Elementary and Early Childhood Classroom	3
<u>EDUC 3221</u>	Methods of Teaching Math	3
<u>EDUC 3430</u>	Diverse Literature for Children	3
<u>EDUC 3530</u>	Teaching Integrated Social Studies and Humanities	3
<u>EDUC 3211</u>	Child Development	3
Total Credits		42

Students must take the following general education courses. Substitutions must be approved by the department chair.

<u>ENGLISH 1120</u>	Exposition And Argumentation	3
<u>ENGLISH 1160</u>	Writing And Research	3
<u>SP&M S 1185</u>	Principles Of Speech	3

PHILOS 1105	Self and World: Introduction To Philosophy	3
PSYCH 1101	General Psychology	3
MATH 1120	College Algebra	5
or MATH 1140	College Algebra	
POL SCI 1200	American Government	3
HISTORY 2110	World Regional Geography	3
HISTORY 1300	American History To 1877	3
or HISTORY 1310	American History Since 1877	
BIO SCI 1113	General Biology	3
BIO SCI 1219	General Biology Lab	1
PHYSICS 1145	College Physics I	3-4
or PHYSICS 1505	Introductory Astronomy	
GEOLOGY 1110	Physical And Environmental Geology	3
or GEOLOGY 1120	Evolution Of The Earth	
CHEM 1100	Introduction To Laboratory Safety & Hazardous Materials	1
Total Credits		40-41

Students must also take a literature course.

~~Elementary An elementary certificate allows students to teach grades 1-6 in the state of Missouri. Students must take the following general education courses. Substitutions must be approved by the department chair.~~ Emphasis Area: Elementary

An elementary certificate allows students to teach grades 1-6 in the state of Missouri.

EDUC 3215	Teaching Reading in Elementary and Early Childhood Settings	3
EDUC 3217	Analysis and Correction of Reading Difficulties	3
EDUC 3218	Language Arts for Elementary and Early Childhood Teachers	3
EDUC 3220	Teaching Science in the Elementary and Early Childhood Classroom	3
EDUC 3221	Methods of Teaching Math	3
EDUC 3222	Geometric Concepts for Elementary Teachers	3
EDUC 3203	Introduction to STEM Education	3
EDUC 3430	Diverse Literature for Children	3
EDUC 3530	Teaching Integrated Social Studies and Humanities	3
Total Credits		27

Students must take the following general education courses. Substitutions must be approved by the department chair.

ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 1160	Writing And Research	3
SP&M S 1185	Principles Of Speech	3

ART 1180	Art Appreciation	3
or MUSIC 1150	Music Understanding And Appreciation	
or THEATRE 1190	Theatre via Video	
HISTORY 1300	American History To 1877	3
or HISTORY 1310	American History Since 1877	
PHILOS 1105	Self and World: Introduction To Philosophy	3
PSYCH 1101	General Psychology	3
ECON 1100	Principles Of Microeconomics	3
or ECON 1200	Principles Of Macroeconomics	
HISTORY 2110	World Regional Geography	3
POL SCI 1200	American Government	3
HISTORY 1100	Early Western Civilization	3
HISTORY 1200	Modern Western Civilization	3
MATH 1103	Fundamentals Of Algebra	3
or MATH 1120	College Algebra	
PHYSICS 1505	Introductory Astronomy	3
or PHYSICS 1145	College Physics I	
BIO SCI 1223	Biodiversity	3
BIO SCI 1229	Biodiversity Lab	1
MATH 1140	College Algebra	3
or MATH 1160	Trigonometry	
GEOLOGY 1110	Physical And Environmental Geology	3
or CHEM 1310 & CHEM 1319	General Chemistry I and General Chemistry Laboratory	
Total Credits		52

Emphasis Area: Middle School Language Arts

An middle school certificate allows graduates to teach grades 5-9 in the designated subject area.

EDUC 3215	Teaching Reading in Elementary and Early Childhood Settings	3
EDUC 3280	Instructional Strategies in the Content Area	3
EDUC 3335	Curriculum And Instruction Of The Middle School	3
ENGLISH 3170	Teaching And Supervising Reading and Writing	3
ENGLISH 2171	Fiction Writing	3
or ENGLISH 2172	Creative Nonfiction Writing	
ENGLISH 3302	History And Structure Of The English Language	3
ENGLISH 3303	The Grammatical Structure of English	3
or ENGLISH 3301	A Linguistic Study Of Modern English	

ENGLISH 1170	Creative Writing	3
EDUC 3298	Teacher Field Experience III	1
Total Credits		25

Students must also take four literature electives, of which three must be 2000 or 3000 level. Students in this program are eligible for both a literature minor and a creative writing minor.

Students must take the following general education courses.

ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 1160	Writing And Research	3
SP&M S 1185	Principles Of Speech	3
ART 1180	Art Appreciation	3
or MUSIC 1150	Music Understanding And Appreciation	
or THEATRE 1190	Theatre via Video	
ENGLISH 1221	American Literature: 1600 To 1865	3
or ENGLISH 1222	American Literature: 1865 To Present	
PHILOS 1105	Self and World: Introduction To Philosophy	3
or PHILOS 1115	Logic and Reasoning: An Introduction	
HISTORY 1100	Early Western Civilization	3
or HISTORY 1200	Modern Western Civilization	
or HISTORY 1300	American History To 1877	
or HISTORY 1310	American History Since 1877	
POL SCI 1200	American Government	3
ECON 1200	Principles Of Macroeconomics	3
or ECON 1100	Principles Of Microeconomics	
MATH 1103	Fundamentals Of Algebra	3
BIO SCI 1113	General Biology	3
BIO SCI 1219	General Biology Lab	1
GEOLOGY 1110	Physical And Environmental Geology	3
or GEOLOGY 1120	Evolution Of The Earth	
or PHYSICS 1505	Introductory Astronomy	
or PHYSICS 1605	Environmental Physics I	
or CHEM 1310	General Chemistry I	
IS&T 1551	Implementing Information Systems: User Perspective	3
or COMP SCI 1500	Computational Problem Solving	
Total Credits		40

Students must also take an additional humanity elective and three free elective hours.

Emphasis Area: Middle School Mathematics

An middle school certificate allows graduates to teach grades 5-9 in the designated subject area.

ENGLISH 3170	Teaching And Supervising Reading and Writing	3
EDUC 3280	Instructional Strategies in the Content Area	3
EDUC 3335	Curriculum And Instruction Of The Middle School	3
EDUC 3298	Teacher Field Experience III	1
EDUC 3203	Introduction to STEM Education	3
EDUC 3222	Geometric Concepts for Elementary Teachers	3
MATH 1103	Fundamentals Of Algebra	3
MATH 1120	College Algebra	5
or MATH 1140	College Algebra	
MATH 1160	Trigonometry	2
MATH 1208	Calculus With Analytic Geometry I	5
or MATH 1214	Calculus I	
or MATH 1210	Calculus I-A	
MATH 1215	Calculus II	4
or MATH 1221	Calculus With Analytic Geometry II	
or MATH 1211	Calculus I-B	
or MATH 1212	Survey of Calculus	
COMP SCI 1500	Computational Problem Solving	3
or IS&T 1551	Implementing Information Systems: User Perspective	
STAT 1115	Statistics For The Social Sciences I	3
or STAT 3113	Applied Engineering Statistics	
or STAT 3115	Engineering Statistics	
Total Credits		41

Students must take the following general education courses.

ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 1160	Writing And Research	3
SP&M S 1185	Principles Of Speech	3
ART 1180	Art Appreciation	3
or MUSIC 1150	Music Understanding And Appreciation	
or THEATRE 1190	Theatre via Video	
ENGLISH 1221	American Literature: 1600 To 1865	3
or ENGLISH 1222	American Literature: 1865 To Present	
PHILOS 1105	Self and World: Introduction To Philosophy	3

or PHILOS 1115	Logic and Reasoning: An Introduction	
HISTORY 1100	Early Western Civilization	3
or HISTORY 1200	Modern Western Civilization	
or HISTORY 1300	American History To 1877	
or HISTORY 1310	American History Since 1877	
POL SCI 1200	American Government	3
ECON 1200	Principles Of Macroeconomics	3
or ECON 1100	Principles Of Microeconomics	
BIO SCI 1219	General Biology Lab	1
BIO SCI 1113	General Biology	3
GEOLOGY 1110	Physical And Environmental Geology	3
or GEOLOGY 1120	Evolution Of The Earth	
PHYSICS 1505	Introductory Astronomy	3
or PHYSICS 1145	College Physics I	
or CHEM 1310	General Chemistry I	
Total Credits		37

Emphasis Area: EmphasisArea:Middle School Science

An middle school certificate allows graduates to teach grades 5-9 in the designated subject area.

ENGLISH 3170	Teaching And Supervising Reading and Writing	3
EDUC 3280	Instructional Strategies in the Content Area	3
EDUC 3335	Curriculum And Instruction Of The Middle School	3
EDUC 3203	Introduction to STEM Education	3
EDUC 3220	Teaching Science in the Elementary and Early Childhood Classroom	3
EDUC 3298	Teacher Field Experience III	1
BIO SCI 1113	General Biology	3
or BIO SCI 1213	Principles of Biology	
BIO SCI 1219	General Biology Lab	1
BIO SCI 1173	Introduction to Environmental Sciences	3
PHYSICS 1505	Introductory Astronomy	3
or PHYSICS 1145	College Physics I	
GEOLOGY 1110	Physical And Environmental Geology	3
GEOLOGY 1120	Evolution Of The Earth	3
HISTORY 3530	History of Science	3
or PHILOS 4345	Philosophy Of Science	
CHEM 1310	General Chemistry I	4
CHEM 1319	General Chemistry Laboratory	1

BIO SCI 2223	General Genetics	3
Total Credits		43

Students must also take the following general education courses.

ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 1160	Writing And Research	3
SP&M S 1185	Principles Of Speech	3
ART 1180	Art Appreciation	3
or MUSIC 1150	Music Understanding And Appreciation	
or THEATRE 1190	Theatre via Video	
ENGLISH 1221	American Literature: 1600 To 1865	3
or ENGLISH 1222	American Literature: 1865 To Present	
PHILOS 1105	Self and World: Introduction To Philosophy	3
or PHILOS 1115	Logic and Reasoning: An Introduction	
HISTORY 1100	Early Western Civilization	3
or HISTORY 1200	Modern Western Civilization	
or HISTORY 1300	American History To 1877	
or HISTORY 1310	American History Since 1877	
POL SCI 1200	American Government	3
ECON 1200	Principles Of Macroeconomics	3
or ECON 1100	Principles Of Microeconomics	
MATH 1103	Fundamentals Of Algebra	3
or MATH 1120	College Algebra	
or MATH 1140	College Algebra	
STAT 1115	Statistics For The Social Sciences I	3
or STAT 3113	Applied Engineering Statistics	
or STAT 3115	Engineering Statistics	
Total Credits		33

Students will also take three hours of humanities elective and three hours of free electives.

Emphasis Area: EmphasisArea:Middle School Social Science

An middle school certificate allows graduates to teach grades 5-9 in the designated subject area.

ENGLISH 3170	Teaching And Supervising Reading and Writing	3
EDUC 3280	Instructional Strategies in the Content Area	3
EDUC 3335	Curriculum And Instruction Of The Middle School	3
EDUC 3530	Teaching Integrated Social Studies and Humanities	3
EDUC 3350	Social Studies In The Elementary School	3

EDUC 3298	Teacher Field Experience III	1
HISTORY 1100	Early Western Civilization	3
or HISTORY 1200	Modern Western Civilization	
HISTORY 1300	American History To 1877	3
or HISTORY 1310	American History Since 1877	
PSYCH 4600	Social Psychology	3
Total Credits		25

Students will also take a DESE-approved American history elective, two DESE-approved world history electives, and one history elective. Students in this program may be eligible for both a history minor and a psychology minor.

ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 1160	Writing And Research	3
SP&M S 1185	Principles Of Speech	3
ART 1180	Art Appreciation	3
or MUSIC 1150	Music Understanding And Appreciation	
or THEATRE 1190	Theatre via Video	
ENGLISH 1221	American Literature: 1600 To 1865	3
or ENGLISH 1222	American Literature: 1865 To Present	
PHILOS 1105	Self and World: Introduction To Philosophy	3
or PHILOS 1115	Logic and Reasoning: An Introduction	
HISTORY 1100	Early Western Civilization	3
or HISTORY 1200	Modern Western Civilization	
or HISTORY 1300	American History To 1877	
or HISTORY 1310	American History Since 1877	
POL SCI 1200	American Government	3
ECON 1200	Principles Of Macroeconomics	3
or ECON 1100	Principles Of Microeconomics	
MATH 1103	Fundamentals Of Algebra	3
or MATH 1120	College Algebra	
or MATH 1140	College Algebra	
BIO SCI 1113	General Biology	3
BIO SCI 1219	General Biology Lab	1
GEOLOGY 1110	Physical And Environmental Geology	3
or GEOLOGY 1120	Evolution Of The Earth	
or PHYSICS 1505	Introductory Astronomy	
or PHYSICS 1605	Environmental Physics I	
or CHEM 1310	General Chemistry I	

IS&T 1551	Implementing Information Systems: User Perspective	3
or COMP SCI 1500	Computational Problem Solving	
Total Credits		40

Students will also take three hours of humanities elective and three hours of free electives.

Justification for request

Currently, there is no degree option for students in an education-related field outside of formal K-12 schooling. Students may want to work as educators in nonprofits such as museums or science centers; these positions often involve coordinating summer camps and field trips as well as creating educational content. The expansion of online education with the pandemic has provided more opportunity for online education as well. This emphasis area provides an option for students to obtain educational knowledge and experience with more flexibility than the certification options which are strictly mandated by DESE. Students in this emphasis area can select electives that align with their intended career choices.

Supporting Documents

[MST PC October 2021.pdf](#)

[Final Educational Studies Emphasis Program Change \(PC\).docx](#)

[MST PC December 2021.pdf](#)

Course Reviewer Comments

tibbettsmg (04/13/22 1:49 pm): added SP&M S 1185 to course list per approvals. MR

Key: 344

Program Change Request

Date Submitted: 04/13/22 12:25 pm

Viewing: **ENGL TC-BS : English & Technical
Communication BS**

File: 374.13

Last approved: 06/10/21 4:07 pm

Last edit: 04/13/22 1:52 pm

Changes proposed by: reardond

Catalog Pages Using this Program
[English and Technical Communication](#)

Start Term

Fall 2022 ~~2021~~

Program Code

ENGL TC-BS

Department

English and Technical Communication

Title

English & Technical Communication BS

Program Requirements and Description

In Workflow

1. **REGLISH 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. **kristyg**

Approval Path

1. 04/13/22 12:30 pm
Kristine Swenson
(kswenson):
Approved for
REGLISH Chair
2. 04/13/22 1:53 pm
Marita Raper
(tibbetmsg):
Approved for CCC
Secretary
3. 04/13/22 1:59 pm
Petra Dewitt
(dewittp): Approved
for Arts &
Humanities DSCC
Chair

History

1. Mar 4, 2021 by
Kristine Swenson
(kswenson)
2. Jun 10, 2021 by
Kristine Swenson
(kswenson)

Students must complete a minimum of 120 hours for a Bachelor of Science in English & Technical Communication, and obtain a grade point average of 2.0. These requirements for the B.S. are in addition to credit received for basic ROTC.

Communications. Student must take the following 9 hours of courses:		
ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 2002	Critical Approaches To Literature	3
One writing intensive course out of major OR two writing emphasized courses out of major		3

Math and Sciences. Students must take **18 hours of math and science courses**, including at least one in biological science and one in the physical sciences and at least one math course at the level of college algebra or higher. In addition to these requirements, students may count [STAT 1115](#), up to 3 hours from psychology classes, and up to 3 hours from history of science and technology classes ([HISTORY 2510](#), [HISTORY 3510](#), or [HISTORY 3530](#)), but may not use them to satisfy another requirement.

Humanities. Students must complete **9 hours in humanities** with at least one course from each of the following: literature, philosophy, and fine arts (Art, Music, or Theater Appreciation).

Social Sciences. Students must complete **12 hours in social science courses**. Students must take at least one course in two of these four areas: economics, history, political science, and psychology.

One of the following courses must be taken to satisfy the requirement of the state of Missouri (the "Williams Law"); this course may count toward fulfilling the social sciences requirement		
HISTORY 1200	Modern Western Civilization	3
HISTORY 1300	American History To 1877	3
HISTORY 1310	American History Since 1877	3
POL SCI 1200	American Government	3

English and Technical Communication. Students must complete **33 credit hours of courses in ENGLISH and/or TCH COM**. The student must earn a grade of C or better in these required courses.

All students must take the following 9 hours for the major:

ENGLISH 2410	Theory Of Written Communication	3
TCH COM 4410	Theory and Practice of Technical Communication	3
TCH COM 5620	Research Methods in Technical Communication	3

Each student chooses *at least* one of the following **CORE MODULES**, which helps define each student's focus for the degree and provides foundational skills within that focus:

I. Technical Communication (12 hours):

TCH COM 1600	Introduction to Technical Communication	3
TCH COM 2540	Layout and Design	3
TCH COM 5510	Technical Editing	3
One of the following:		
TCH COM 3550	Writing for Social Media	3

TCH COM 3580	Business Communication	3
TCH COM 3570	Writing in the Sciences	3
TCH COM 5560	Web-Based Communication	3

II. Literature (12 hours):

- One 1000 or 2000 level literature class
- One 2000 or 3000 level literature class with a "media" or "genre" designation
- One 3000 level literature class with a geographical designation
- One 3000 level literature class with a historical or cultural designation

III. Linguistics (12 hours):

ENGLISH 3301	A Linguistic Study Of Modern English	3
ENGLISH 3302	History And Structure Of The English Language	3
ENGLISH 3303	The Grammatical Structure of English	3
ENGLISH 3304	Language in Society	3

Students should choose the remaining required hours in E&TC in consultation with their advisor to complete specialized modules and certificates that correspond with their interests and future goals. Specialized modules are generally sets of 3-4 courses that allow students to pursue specialized areas of our degree program. Please refer to E&TC website and/or consult your advisor for a full list of current modules and certificates. Some of these include: Creative Writing, Professional Writing, Game Studies, English Education, Digital Presence Management.

Electives Credit. Each student will elect sufficient additional courses to complete a minimum of 120 credit hours, at the discretion of the major adviser. Electives housed in other departments can and should be used to fulfill requirements for interdisciplinary specialized modules and certificates. At least 9 hours of these electives must be at the 3000 or above level, although substitutions may be permitted at the discretion of the major adviser. All electives must accumulate to at least a 2.0 grade point average.

~~**English Education Certification. The student will fulfill the general requirements for the bachelor of science degree, the requirements for the ETC major, and the requirements for Missouri certification in the teaching of English including a 3.0 content and professional requirement GPA, and passage of the Missouri Content exam. 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. Contact the Missouri S&T English & Tech Com department for advising. Students preparing for teacher certification should note that the major requirements for English certification are as follows: 1. — ENGLISH 1211, ENGLISH 1212, ENGLISH 1221, ENGLISH 1222. 2. — ENGLISH 2002 3. — Capstone course for major: TCH COM 4410. 4. — Fifteen hours of course work at the 2000 or 3000 level in English and American literature, including two courses in English Literature; and two American Literature courses, including literature for adolescents. 5. — Six hours of linguistics. 6. — Twelve hours of writing, including a course in the teaching of writing. Six of these hours will also be satisfied by the general education composition requirement for the B.S. degree; three of these hours will also be satisfied by the capstone course. 7. — A minimum of fifteen hours must be at the 3000 level or above.**~~ **Graduate Track Pathway to MS in Technical Communication:**

An undergraduate in the Department of English and Technical Communication at Missouri S&T, and select undergraduates in other departments, may opt to apply for the Graduate Track Pathway in Technical Communication (TC). This program allows a student to complete a bachelor's degree and then the MS in Tech Com in less time than if pursuing each degree consecutively. In this program, 9 hours of TC MS coursework may apply to both the BS and MS requirements. The credit hours transferred from their Missouri S&T bachelor's degree to their Technical Communication master's degree may be taken at the lower undergraduate tuition rate.

To be eligible for the GTP, an undergraduate must be one year from completion of their bachelor's degree (excluding the semester in which they are currently enrolled). They must have completed 9 credit hours of any combination of English and TC courses selected from 1160, 1600, 2002, 2410, 2540, 2560, and any 3000 or 4000 level English or TC course at Missouri S&T with at least a 3.50 GPA in those courses and a cumulative GPA of 3.0 or higher.

To be admitted, the student must complete the GTP Admission and Course Approval Form and must have the recommendation of a TC faculty member. Once admitted to the GTP, the student may transfer nine credit hours from their Missouri S&T bachelor's degree to their Technical Communication master's degree. Depending on the bachelor's program, some or all of those hours might also fulfill elective undergraduate categories. These nine hours of shared credit will be charged at the undergraduate tuition rate. The nine hours of shared-credit coursework must be approved by the academic advisor and must be courses approved to be part of the MS curriculum. Taking additional courses for graduate credit beyond these nine hours will require formal application and acceptance to the MS program. Acceptance to the MS program from the GTP is assured so long as the student maintains a 3.0 GPA or higher in TC coursework.

E&TC majors are encouraged to consult with their academic advisor during their sophomore or junior year about preparing for GTP admission.

Justification for request

Supporting Documents

Course Reviewer Comments

tibbettsmg (04/13/22 1:52 pm): updated term to FS22. MR

Key: 374

Program Change Request

Date Submitted: 04/05/22 3:42 pm

Viewing: **GE ENG-BS : Geological Engineering
BS**

File: 156.66

Last approved: 10/28/21 10:36 am

Last edit: 04/07/22 11:10 am

Changes proposed by: grotekr

Catalog Pages Using this Program

[Geological Engineering](#)

Start Term

Fall 2022

Program Code

GE ENG-BS

Department

Geosciences and Geological and Petroleum Engineering

Title

Geological Engineering BS

Program Requirements and 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. **FS Meeting Agenda**
8. **Faculty Senate Chair**
9. **Registrar**
10. **kristyg**

Approval Path

1. 04/05/22 3:56 pm
Jeff Cawfield (jdc):
Approved for
RGEOENG Chair
2. 04/07/22 11:10 am
Marita Raper
(tibbetmsg):
Approved for CCC
Secretary
3. 04/19/22 8:49 am
Stephen Raper
(sraper): Approved
for Engineering
DSCC Chair

History

1. Mar 18, 2014 by
Lahne Black (lahne)
2. Nov 18, 2014 by
pantaleoa
3. Nov 18, 2014 by
pantaleoa
4. Jul 20, 2015 by
pantaleoa
5. Feb 27, 2018 by
Katherine Grote

- (grotekr)
 6. Jun 18, 2018 by Katherine Grote (grotekr)
 7. Jun 14, 2019 by Katherine Grote (grotekr)
 8. Mar 3, 2020 by ershenb
 9. Jul 1, 2020 by Leslie Gertsch (gertschl)
 10. Jun 10, 2021 by Sharon Lauck (laucks)
 11. Oct 28, 2021 by Katherine Grote (grotekr)

~~Bachelor of Science Geological Engineering Entering freshmen desiring to study geological engineering will be admitted to the Foundational Engineering and Computing Program. They may state a geological engineering preference, which is a consideration for geological engineering programs scholarships. The focus of the Foundational Engineering and Computing Program is on enhanced advising and career counseling, to provide the student with the information necessary to make an informed decision regarding the choice of a major.~~ Bachelor For the bachelor of Science Geological Engineering

For the bachelor of science degree in geological engineering a minimum of 128 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. The student must maintain at least two grade points per credit hour (grade of C) for all courses taken in geological engineering. Their program of study must contain a minimum of 18 credit hours of course work in the humanities and the social sciences areas, selected as described in the Engineering Degree Requirements section of this catalog. Geological engineering students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade is not required; however, passing this examination is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process.

The geological engineering program at Missouri S&T is characterized by comprehensive understanding of the scientific basics of engineering and innovative application. We focus on solving the problems and meeting the needs of civilization as those are affected by geological materials, structures, or events. The necessary interactions required for this among the various sciences, engineering disciplines, and human professions are emphasized in research, analysis, synthesis, and design. Learning occurs in classroom, laboratory, online, field, and combined modes.

Freshman Year			
First Semester	Credits	Second Semester	Credits
MATH 1214 or 1211 ¹	4	MATH 1215 ¹	4

CHEM 1100	1	MECH ENG 1720	3
CHEM 1310	4	PHYSICS 1135	4
CHEM 1319	1	GEO ENG 1150 or GEOLOGY 1110	3
ENGLISH 1120	3	Humanities/Soc Sci Elective ^a	3
FR ENG 1100	1		
Humanities/Soc Sci Elective ^a	3		
	17		17
Sophomore Year			
First Semester	Credits	Second Semester	Credits
MATH 2222	4	MATH 3304	3
PHYSICS 2135	4	CIV ENG 2200	3
GEO ENG 3148	3	GEO ENG 2110	1
GEO ENG 3249	3	GEOLOGY 2611	3
Humanities/Soc Sci Elective ^a	3	GEO ENG 3175	3
		Humanities/Soc Sci Elective ^a	3
	17		16
Junior Year			
First Semester	Credits	Second Semester	Credits
MECH ENG 2350	2	CIV ENG 3330	3
CIV ENG 2210	3	CIV ENG 3715 or MIN ENG 5823	3
GEO ENG 5331	3	GEO ENG 5174	3
GEOLOGY 3310	3	Chemistry/Geochemistry Elective ^b	3
GEOLOGY 3319	1	Technical Elective ^c	3
ECON 1100 or 1200	3		
	15		15
Senior Year			
First Semester	Credits	Second Semester	Credits
GEO ENG 4010	0.5	GEO ENG 4010	0.5
GEO ENG 5441	3	GEO ENG 4115	3
GEO ENG 5443	3	GEO ENG 5090	3
ENGLISH 3560	3	Geo Eng Elective ^e	3
Geophysics Elective ^d	3	Eng Econ Elective ^f	3
Technical Elective ^c	3	Humanities/Soc Sci Elective ^a	3
		Statistics Elective^h	<u>3</u>
	15.5		15.5
Total Credits: 128			

a

Humanities/Social Sciences Elective: This course sequence must provide both breadth and depth of content and meet requirements specified in the Engineering Degree Requirements section of the current undergraduate catalog. A total of 18 credit hours is required.

b
Chemistry/Geochemistry Elective: Select from chemistry, geochemistry or biology courses as approved by advisor.

c
Technical Elective: Select from advanced courses in science or engineering as approved by advisor.

d
Geophysics Elective: Select from [GEO ENG 5736](#), [GEO ENG 5761](#), or [GEO ENG 5782](#).

e
Geological Engineering Elective: Select from [GEO ENG 5471](#), [GEO ENG 5381](#), [GEO ENG 5556](#), [MIN ENG 5823](#), [PET ENG 2510](#), [PET ENG 3520](#), [CIV ENG 3715](#), [CIV ENG 4729](#), or [CIV ENG 5715](#).

f
Engineering Economics Elective: Select from [ENG MGT 5210](#), [MIN ENG 3512](#), or [PET ENG 4590](#) or both [ENG MGT 1100](#) and [ENG MGT 1210](#).

g
[MATH 1208](#) or [MATH 1211](#) may be substituted for [MATH 1214](#). [MATH 1221](#) may be substituted for [MATH 1215](#).

[h](#)
Statistics Elective: Select one course from [GEO ENG 4115](#), [STAT 3113](#), or [STAT 3115](#).

Geological Engineering Focus Areas

The student uses the following course lists as guidance to satisfy the various elective requirements (chemistry/geochemistry, technical, geophysics, and geological engineering) while focusing preparation for their chosen career specialty. Other courses can be substituted with advisor approval.

Dual Professional Registration as a Geologist

GEOLOGY 2096	Field Geology	3
GEOLOGY 3410	Introduction To Geochemistry	3
GEOLOGY 3620	Stratigraphy And Sedimentation	3
GEOLOGY 4097	Advanced Field Geology	3
GEOLOGY 4841	Geological Field Studies	3
GEO ENG 5144	Remote Sensing Technology	3

Engineering Geology and Geotechnics

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

Environmental and Engineering Geophysics

GEO ENG 5144	Remote Sensing Technology	3
GEO ENG 5736	Geophysical Field Methods	3
GEO ENG 5761	Transportation Applications of Geophysics	3
GEO ENG 5782	Environmental and Engineering Geophysics	3

GEOPHYS 4241	Electrical Methods In Geophysics	3
GEOPHYS 4261	Geophysical Instrumentation	1
GEOPHYS 5231	Seismic Data Processing	3

Groundwater Hydrology and Environmental Protection

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

Quarry and Mine Engineering

GEO ENG 4276	Environmental Aspects Of Mining	3
GEO ENG 5471	Rock Engineering	3
GEO ENG 5575	Aggregates And Quarrying	3
CIV ENG 3116	Construction Materials, Properties And Testing	3
MIN ENG 3913	Mineral Identification and Exploration	3
MIN ENG 5612	Principles of Explosives Engineering	3
MIN ENG 5822	Strata Control	3
MIN ENG 5823	Rock Mechanics	3
MIN ENG 5912	Mine Power and Drainage	3

Renewable and Conventional Energy Resources

GEO ENG 5146	Applications Of Geographic Information Systems	3
GEO ENG 5556	Renewable Energy Systems	3
GEOLOGY 4421	Radioactive Waste Management And Remediation	3
or NUC ENG 4367	Radioactive Waste Management And Remediation	
GEOLOGY 5511	Applied Petroleum Geology	3
MIN ENG 5322	Coal Mining Methods	3
MIN ENG 5422	Coal Preparation	3
MIN ENG 5823	Rock Mechanics	3
PET ENG 2510	Properties Of Hydrocarbon Fluids	3
PET ENG 3330	Well Logging	3
PET ENG 3520	Petroleum Reservoir Engineering	3
PET ENG 4520	Well Test Analysis	3

Accelerated BS/MS Option (Graduate Pathway)

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

- Have completed 64 credit hours of course work, including:
 - All chemistry and mathematics requirements, and
 - 21 credit hours of geological engineering courses with a minimum GPA of 3.20 in the geological engineering courses.
- Complete an application listing the courses to be shared, with approval from the undergraduate advisor and a recommendation from the geological engineering faculty member who agrees to serve as their MS advisor. The shared courses may not be undergraduate research, special problems, or transfer courses. Applications are due within one semester of completing the last shared course.
- Follow all geological engineering non-thesis MS program requirements (see the Graduate Catalog).

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

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

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

Justification for request

Language to prior Freshman Engineering Program has been removed.

Additional options for Statistics courses have been added. These options are both appropriate for the degree program and give students additional scheduling flexibility.

Supporting Documents

Course Reviewer Comments

tibbettsmg (04/07/22 11:10 am): updated footnote format. MR

Key: 156

Program Change Request

Date Submitted: 04/06/22 1:20 pm

Viewing: **INORGPS-MS : Industrial Organizational Psychology MS**

File: 234.28

Last approved: 09/15/20 9:41 am

Last edit: 04/14/22 10:32 am

Changes proposed by: burnsde

Catalog Pages Using this Program

[Psychology](#)

Start Term

Fall 2022 ~~2020~~

Program Code

INORGPS-MS

Department

Psychological Science

Title

Industrial Organizational Psychology MS

Program Requirements and Description

In Workflow

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

Approval Path

1. 04/13/22 6:10 pm
Susan Murray (murray): Approved for RPSYCHOL Chair
2. 04/14/22 10:32 am
Marita Raper (tibbettsmg): Approved for CCC Secretary
3. 04/14/22 10:47 am
Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair

History

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

5. Apr 24, 2014 by
Lahne Black (lahne)
6. May 7, 2014 by
Lahne Black (lahne)
7. Jul 8, 2014 by
pantaleoa
8. Jul 29, 2014 by
pantaleoa
9. Jun 19, 2015 by
nstone
10. Jun 23, 2015 by
pantaleoa
11. Jul 24, 2015 by
pantaleoa
12. Jul 24, 2015 by
pantaleoa
13. Dec 1, 2016 by
Nathan Weidner
(weidnern)
14. Jul 11, 2017 by
Crystal Wilson
(wilsoncry)
15. Feb 27, 2018 by
Nathan Weidner
(weidnern)
16. Jul 1, 2020 by
Devin Burns
(burnsde)
17. Sep 15, 2020 by
Crystal Wilson
(wilsoncry)

Master of Science in Industrial-Organizational Psychology

Admission Requirements

Students interested in the M.S. in I-O psychology program should review the admissions requirements listed on our website (<https://psych.mst.edu/academic-programs/graduate/admission-requirements/>).

Program Requirements

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

Core Courses (24 hours)	
PSYCH 5020	Introduction to Industrial-Organizational Psychology
PSYCH 5601	Small Group Dynamics

PSYCH 5602	Organizational Development
PSYCH 5700	Job Analysis and Performance Management
PSYCH 6610	Leadership, Motivation, and Culture
PSYCH 6702	Personnel Selection
PSYCH 6602	Employee Affect and Behavior
PSYCH 6700	Training and Development
Methods Courses (10 hours)	
PSYCH 5201	Psychometrics
PSYCH 5210	Advanced Research Methods
PSYCH 5012	Ethics and Professional Responsibilities
PSYCH 5202	Applied Psychological Data Analysis
Electives from list below or Thesis (6 hours)	
PSYCH 5710	Advanced Human Factors
PSYCH 5600	Advanced Social Psychology
PSYCH 5001.001	Course PSYCH 5001.001 Not Found
PSYCH 5001.002	Course PSYCH 5001.002 Not Found
PSYCH 5740	Occupational Health and Safety
PSYCH 5001	Special Topics
Students completing a thesis would need to complete the following in place of electives:	
PSYCH 6099	Research

Justification for request

Psych 5740 used to be Psych 5001 and now has a real number.

Supporting Documents

Course Reviewer Comments

tibbettsmg (04/14/22 10:32 am): updated term to FS22. MR

Key: 234

Program Change Request

Date Submitted: 04/05/22 8:13 pm

Viewing: **MI ENG-BS : Mining Engineering BS**

File: 95.32

Last approved: 11/01/21 11:04 am

Last edit: 04/05/22 8:13 pm

Changes proposed by: kabp3

Catalog Pages Using this Program

[Mining Engineering](#)

Start Term

Fall 2022

Program Code

MI ENG-BS

Department

Mining & Nuclear Engineering

Title

Mining Engineering BS

Program Requirements and Description

In Workflow

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

Approval Path

1. 04/05/22 8:16 pm
Kwame Awuah-Offei (kwamea):
Approved for
MINEXP ENG Chair
2. 04/07/22 10:56 am
Marita Raper
(tibbetmsg):
Approved for CCC
Secretary
3. 04/19/22 8:51 am
Stephen Raper
(sraper): Approved
for Engineering
DSCC Chair

History

1. Apr 28, 2014 by
Kwame Awuah-Offei (kwamea)
2. Jan 30, 2015 by
Tina Alobaidan
(cifarellit)
3. Jun 28, 2017 by

Tina Alobaidan
(cifarellit)

4. Mar 21, 2018 by

Tina Alobaidan
(cifarellit)

5. Jul 6, 2020 by
ershenb

6. Nov 1, 2021 by
Stephen Casey
(caseysc)

Bachelor of Science **The** Mining Engineering

The Mining Engineering program at Missouri S&T is characterized by its focus on the scientific basics of engineering and its innovative application to application; indeed, the extraction underlying theme of this educational program is the application of (critical) minerals the scientific basics to engineering practice through attention to meet societal needs. problems and needs of the public. Indeed, the underlying theme of this educational program is the application of basic science to engineering practice by solving engineering problems related to mineral extraction. These problems include the safe and sustainable extraction of minerals to power green energy. 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.

Incoming students who state the Mining Engineering preference are required to complete MIN ENG 2126 during the first or second semester on campus.

~~Bachelor of Science Mining Engineering Entering freshmen desiring to study Mining Engineering will be admitted to the Foundational Engineering and Computing Program. They will, however, be permitted, if they wish, to state a Mining 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 fundamental sciences and mathematics, 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. In addition, students who state the Mining Engineering preference are required to complete MIN ENG 2126 during the first or second semester on campus.~~ For the Bachelor of Science degree in Mining Engineering a minimum of 128 credit hours is required, although completion of an emphasis area may require up to 132 credits. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. A student must maintain at least two grade points per credit hour for all courses taken in the student's major department, and an average of at least two grade points per credit hour must be maintained in Mining 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, two economics courses, one humanities course, [ENGLISH 1120](#) and either [ENGLISH 1160](#), [ENGLISH 3560](#) or [TCH COM 1600](#). The history course is to be selected from [HISTORY 1200](#) , [HISTORY 1300](#) , [HISTORY 1310](#) , or [POL SCI 1200](#) . The economics courses must be either [ECON 1100](#) or [ECON 1200](#), and [ECON 3512](#) . The humanities course must meet requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog.
2. The remaining three credit hours must meet requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog. Foreign language courses can be considered to be one of these courses. (Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 4000 or 5000

level.)

3. Special topics, special problems courses and honors seminars are allowed only by petition to and approval by the student's department chairman.

Freshman Year			
First Semester	Credits	Second Semester	Credits
MATH 1214 or 1211	4	MATH 1215	4
CHEM 1310	4	PHYSICS 1135	4
CHEM 1319	1	MECH ENG 1720	3
CHEM 1100	1	MIN ENG 1912	2
MIN ENG 2126	1	GEO ENG 1150	3
FR ENG 1100	1		
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3		
ENGLISH 1120	3		
	18		16
Sophomore Year			
First Semester	Credits	Second Semester	Credits
MIN ENG 2925	2	MIN ENG 2412	3
MIN ENG 3912	3	MATH 3304	3
MATH 2222	4	MECH ENG 2527	3
MIN ENG 3913	3	MECH ENG 2350	2
CIV ENG 2200	3	PHYSICS 2135	4
ECON 1100 or 1200	3		
	18		15
Junior Year			
First Semester	Credits	Second Semester	Credits
STAT 3113 or 3115	3	MIN ENG 4512	3
NUC ENG 3221 or CIV ENG 3330	3	MIN ENG 5522	3
MIN ENG 5932	3	MIN ENG 5823	3
CIV ENG 2210	3	MIN ENG 5933	3
ECON 3512	3	ENGLISH 1600 , or 1160 , or 3560	3
GEOLOGY 3310	3		
	18		15
Senior Year			
First Semester	Credits	Second Semester	Credits
MIN ENG 5612	3	MIN ENG 5742	3
MIN ENG 5912	3	MIN ENG 4097	4
MIN ENG 4096	3	Technical Elective ^{1,2,3,4,5,6}	3

H/SS Elective	3	H/SS Elective	3
MIN ENG 5113	3		
	15		13
Total Credits: 128			

1

Explosives Engineering Emphasis: [MIN ENG 5622](#) (Blasting Tech) and [MIN ENG 5823](#) (Rock Mechanics) or [MIN ENG 5922](#) (Tunneling/Construction) have to be taken as Technical Electives.

2

Quarrying Emphasis: Two of [CIV ENG 3116](#) (Construction Materials); [MIN ENG 5212](#) (Aggregate and Quarrying); and [MIN ENG 5412](#) (Aggregate Materials) have to be taken as Technical Electives.

3

Coal Emphasis: Two of [MIN ENG 5322](#) (Coal Mine Development and Production), [MIN ENG 4414](#) (Mine Plant Management) or an approved substitute course must be taken as Technical Electives.

4

Mining and the Environment Emphasis: [GEO ENG 5235](#) (Environmental Geological Engineering) and [GEO ENG 5233](#) (Risk Assessment in Environmental Studies), or approved substitute courses have to be taken as Technical Electives.

5

Mining Health and Safety Emphasis: [MIN ENG 3002](#) (Mine Rescue), [ENG MGT 4330](#) (Human Factors), or other approved substitute courses must be taken as Technical Electives.

6

Sustainable Development Emphasis: [POL SCI 3310](#) (Public Policy Analysis), [ECON 4440](#) (Environmental and Natural Resource Economics), or other approved substitute courses must be taken as Technical Electives.

~~The Mining 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.~~**Graduating Mining Engineers Examination**

Mining engineering students must complete the Fundamentals of Engineering Examination prior to graduation as a senior assessment requirement. A passing grade is not required to earn a B.S. degree in mining engineering; however it is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process.

Mining Health and Safety Emphasis

Junior and Senior Years		
MIN ENG 3002	Mine Rescue (or approved substitute course in lieu of Technical Elective.)	3
ENG MGT 4330	Human Factors (or approved substitute course in lieu of Technical Elective.)	3

Sustainable Development Emphasis

Junior and Senior Years		
POL SCI 3300	Principles Of Public Policy (or approved substitute course in lieu of Technical Elective.)	3
ECON 4440	Environmental And Natural Resource Economics (or approved substitute course in lieu of Technical Elective.)	3

Quarrying Engineering Emphasis

Senior Year		
CIV ENG 3116	Construction Materials, Properties And Testing (in lieu of Technical Elective.)	3
MIN ENG 5212	Aggregates and Quarrying	3

Explosives Engineering Emphasis

Junior and Senior Years		
Choose one of the following courses in lieu of Technical Elective in Junior Year:		
A three-credit hour explosives engineering (EXP ENG) course		
EXP ENG 5922	Tunneling & Underground Construction Techniques	3
GEO ENG 5471	Rock Engineering	
In lieu of Technical Elective in Senior Year:		
EXP ENG 5622	Blasting Design And Technology	

Coal Emphasis

Junior and Senior Years		
MIN ENG 5322	Coal Mining Methods	3
MIN ENG 4414	Mine Plant Management (or approved substitute course in lieu of Technical Elective.)	2

Mining and the Environment Emphasis

Junior and Senior Years		
ENV ENG 5640	Environmental Law And Regulations	3
GEO ENG 5233	Risk Assessment In Environmental Studies (or approved substitute course in lieu of Technical Elective.)	3

Justification for request

This change is necessary to comply with the new direct admission requirements. The change essentially removes the reference to FEP and re-arranges the text to have an overview of the mining engineering program.

Supporting Documents

Course Reviewer Comments

Key: 95

Program Change Request

Date Submitted: 04/05/22 3:10 pm

Viewing: **PHILTCH-MI : Philosophy of Technology Minor**

File: 188.10

Last approved: 07/21/15 12:46 pm

Last edit: 04/12/22 11:42 am

Changes proposed by: msp7h

Catalog Pages Using this Program

[Philosophy](#)

Start Term

Fall 2022 8/1/2014

Program Code

PHILTCH-MI

Department

Arts, Languages, & Philosophy

Title

Philosophy of Technology Minor

Program Requirements and Description

In Workflow

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

Approval Path

1. 04/07/22 1:17 pm
Audra Merfeld-Langston (audram):
Approved for RPHILOSO Chair
2. 04/12/22 11:42 am
Marita Raper (tibbetmsg):
Approved for CCC Secretary
3. 04/12/22 11:45 am
Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

History

1. Apr 28, 2014 by Irina Ivliyeva (ivliyeva)
2. Aug 5, 2014 by pantaleoa
3. Jul 21, 2015 by pantaleoa

Philosophy of Technology Minor

To qualify, all students must take 15 hours of course work in the following areas of philosophy, political science and history. Nine or more of these hours will need to be in philosophy.

Mandatory:		
PHILOS 1115	Logic and Reasoning: An Introduction	3
At least two of the following, one of which must be a philosophy class:		
PHILOS 4345	Philosophy Of Science	3
PHILOS 4320	Minds And Machines	3
HISTORY 3550	Course HISTORY 3550 Not Found	3
HISTORY 4550	Architecture, Technology and Society; 1750 to Present	3
Additional courses from:		
PHILOS 1105	Self and World: Introduction To Philosophy	3
BIO SCI 1163	Biotechnology in Film	3
PHILOS 3223	Bioethics	3
HISTORY 2510	History of Technology	3
HISTORY 3510	Twentieth Century Technology And Society	3

Justification for request

This is correcting the missing History 3350 course with History 4550 so that the curriculum for this minor is up-to-date and correct.

Supporting Documents

Course Reviewer Comments

tibbettsmg (04/12/22 11:42 am): updated term to FS22. MR

Key: 188

Program Change Request

Date Submitted: 04/08/22 4:03 pm

Viewing: **PRE LAW-MI : Pre Law Minor**

File: 121.7

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

Last edit: 04/08/22 4:03 pm

Changes proposed by: dewittp

Catalog Pages Using this Program

[Prelaw](#)

Start Term

Fall 2022 2018

Program Code

PRE LAW-MI

Department

History and Political Science

Title

Pre Law Minor

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. kristyg

Approval Path

1. 04/11/22 11:20 am
Michael Bruening
(bruening):
Approved for
RHISTORY Chair
2. 04/12/22 11:33 am
Marita Raper
(tibbetmsg):
Approved for CCC
Secretary
3. 04/12/22 11:36 am
Petra Dewitt
(dewittp): Approved
for Arts &
Humanities DSCC
Chair

History

1. Feb 27, 2018 by
Petra Dewitt
(dewittp)

Prelaw Minor

To qualify, students must complete a minimum of 18 hours of coursework in the following disciplines.

PHILOS 1115	Logic and Reasoning: An Introduction	3
Select two of the following:		6
HISTORY 1300	American History To 1877	
HISTORY 1310	American History Since 1877	
POL SCI 1200	American Government	
PHILOS 1105	Self and World: Introduction To Philosophy	
Select three of the following:		9
ENGLISH 2410	Theory Of Written Communication	
ENGLISH 3101	Advanced Composition	
HISTORY 2510	History of Technology	
HISTORY 2791	Historical Research Methods	
HISTORY 3530	History of Science	
HISTORY 4470	American Environmental History	
HISTORY 2790	Course HISTORY 2790 Not Found	
HISTORY 4790	Historiography	
PHILOS 3235	Business Ethics	
PHILOS 4340	From Activism to Zoos: Issues in Social Ethics	
PHILOS 4345	Philosophy Of Science	
PHILOS 4350	Environmental Ethics	
PHILOS 4360	Who Should Rule and Why? Debates in Political Philosophy	
POL SCI 3300	Principles Of Public Policy	
POL SCI 3310	Public Policy Analysis	
POL SCI 3760	The American Presidency	
POL SCI 3763	Contemporary Political Thought	
May substitute ONE of these three courses with one of the following with the approval of the advisor:		
BUS 1210	Financial Accounting	
BUS 2910	Business Law	
COMP SCI 4700	Intellectual Property For Computer Scientists	
IS&T 5168/PHILOS 4368	Law and Ethics in E-Commerce	
ECON 3830	History Of Economic Thought	
ECON 4430	Cost-Benefit Analysis	
ECON 4820	Labor Economics	

ENG MGT 5514	Patent Law
ENG MGT 5512	Legal Environment
ETYM 4306	Introduction To Etymology

Justification for request

History 2790 is no longer available, it has been replaced by History 2791 and History 4790. We believe either course is useful for anyone going to law school.

Supporting Documents

Course Reviewer Comments

Key: 121

Program Change Request

Date Submitted: 04/05/22 4:59 pm

Viewing: **PRE-MED-MI : Pre-Medicine Minor**

File: 123.9

Last approved: 02/03/21 10:52 am

Last edit: 04/12/22 11:34 am

Changes proposed by: shannonk

Catalog Pages Using this Program

[Prehealth Professions](#)

Start Term

Fall ~~2021~~ 2022

Program Code

PRE-MED-MI

Department

College of Arts & Sciences

Title

Pre-Medicine Minor

Program Requirements and Description

In Workflow

1. CCC Secretary
2. Sciences 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. kristyg

Approval Path

1. 04/12/22 11:35 am
Marita Raper
(tibbettsmg):
Approved for CCC Secretary
2. 04/18/22 4:06 pm
Katie Shannon
(shannonk):
Approved for Sciences DSCC Chair

History

1. Mar 31, 2014 by pantaleoa
2. Mar 31, 2014 by pantaleoa
3. Dec 11, 2017 by David Westenberg (djwesten)
4. Apr 28, 2020 by Katie Shannon (shannonk)
5. Feb 3, 2021 by Katie Shannon (shannonk)

Premedicine Minor

It is recommended that students seeking the Pre-Medicine minor declare their intentions as soon as possible. Students completing the Pre-Medicine minor curriculum in addition to their BA/BS curriculum will have completed all requirements for admission to most Medical, Dental, Veterinary or other health profession programs. However, it is important to consult with a member of the Pre-Health Professions Advisory Committee to ensure you are completing the necessary coursework for your desired profession. The Pre-Medicine minor is not intended for a student majoring in Chemistry, Biological Sciences or Chemical and Biochemical Engineering which already offer a Pre-Medicine approved curriculum. Required courses for the Pre-Medicine minor are:

BIO SCI 1213 & BIO SCI 1219	Principles of Biology and General Biology Lab	4
or BIO SCI 1113 & BIO SCI 1219	General Biology and General Biology Lab	
BIO SCI 2213 & BIO SCI 2219	Cell Biology and Cell Biology Laboratory	4
CHEM 1310 & CHEM 1319 & CHEM 1320 & CHEM 1100	General Chemistry I and General Chemistry Laboratory and General Chemistry II and Introduction To Laboratory Safety & Hazardous Materials	9
CHEM 2210 & CHEM 2219 & CHEM 2220 & CHEM 2229	Organic Chemistry I and Organic Chemistry I Lab and Organic Chemistry II and Organic Chemistry II Lab	8
PHYSICS 1145	College Physics I	4
or PHYSICS 1135	Engineering Physics I	
PHYSICS 2145	College Physics II	4
or PHYSICS 2135	Engineering Physics II	
MATH 1208	Calculus With Analytic Geometry I	
or MATH 1212	Survey of Calculus	
or MATH 1214	Calculus I	
MATH 1211	Calculus I-B	<u>4</u>
or MATH 1212	Survey of Calculus	
or MATH 1214	Calculus I	
One of the following courses (taking all four courses is strongly encouraged):		
BIO SCI 2223	General Genetics	
BIO SCI 3333	Human Anatomy and Physiology I	
BIO SCI 3343	Human Anatomy and Physiology II	
CHEM 4610	General Biochemistry	
PREMED 3010	Communication Workshop for the Pre-Health Student (Suggested but not required)	1

Justification for request

MATH 1208 removed and MATH 1211 added

Supporting Documents

Course Reviewer Comments

tibbettsmg (04/12/22 11:34 am): updated term to FS22. MR

Key: 123

Program Change Request

Date Submitted: 04/05/22 4:56 pm

Viewing: **PROPOSED : Biological Sciences BS with Emphasis area in Medical Laboratory Scientist**

File: 377.7

Last approved: 04/15/21 10:13 am

Last edit: 04/05/22 4:56 pm

Changes proposed by: shannonk

Catalog Pages Using this Program

[Biological Sciences](#)

Start Term

Fall ~~2021~~ 2022

Program Code

PROPOSED

Department

Biological Sciences

Title

Biological Sciences BS with Emphasis area in Medical Laboratory Scientist

Program Requirements and Description

In Workflow

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

Approval Path

1. 04/06/22 8:03 am
David Duvernell (duvernell):
Approved for
RBIOLSCI Chair
2. 04/12/22 11:51 am
Marita Raper (tibbettsmg):
Approved for CCC
Secretary
3. 04/18/22 4:06 pm
Katie Shannon (shannonk):
Approved for
Sciences DSCC
Chair

History

1. Apr 13, 2021 by
Katie Shannon (shannonk)
2. Apr 14, 2021 by
Crystal Wilson (wilsoncry)
3. Apr 15, 2021 by
Crystal Wilson

Bachelor of Science Biological Sciences Medical Laboratory Scientist Emphasis Area Degree Requirements

The Medical Laboratory Scientist 3+1 emphasis area is designed for students who wish to earn a B.S. degree in Biological Sciences, and become board certified by the American Society of Clinical Pathologists as a Medical Laboratory Scientist. Students who pursue this emphasis area complete three years of course work at Missouri S&T. The fourth year of clinical/professional study takes place at an affiliated accredited school of medical technology. Students who wish to complete this emphasis area will apply to University affiliated clinical programs in their third year, and must be accepted into a clinical program in order to complete this emphasis area. Students who are interested in the MLS 3+1 emphasis area should seek advisement early in their degree program from the Biological Sciences MLS 3+1 emphasis area advisor in order to insure adherence to special program requirements.

The Biological Science B.S. degree in the MLS 3+1 emphasis area must include a minimum of 38 semester hours of biological sciences course work plus an additional minimum of 32 hours of clinical program coursework.

Required biological sciences courses:		
BIO SCI 1201	Biological Sciences Freshman Seminar	1
BIO SCI 1113	General Biology	3
or BIO SCI 1213	Principles of Biology	
BIO SCI 1219	General Biology Lab	1
BIO SCI 1223 & BIO SCI 1229	Biodiversity and Biodiversity Lab	4
BIO SCI 2213 & BIO SCI 2219	Cell Biology and Cell Biology Laboratory	4
BIO SCI 2223	General Genetics	3
BIO SCI 3233	Evolution	3
BIO SCI 3313 & BIO SCI 3319	Microbiology and Microbiology Lab	5
BIO SCI 4393	Immunology	3
BIO SCI 4010	Seminar	1
Selection of ten hours of additional advanced biological sciences courses should be informed by the recommendations of specific clinical affiliate programs. Suggested electives:		
BIO SCI 5313	Pathogenic Microbiology	3
BIO SCI 4493	General Virology	3
BIO SCI 3333	Human Anatomy and Physiology I	3
BIO SCI 3343	Human Anatomy and Physiology II	3
BIO SCI 3359	Physiology Lab	1

Clinical program coursework typically includes a total of 32 credit hours, but may include more, depending on clinical affiliate program. Courses are enrolled at Missouri S&T from the following options in consultation with the MLS 3+1 emphasis area advisor:

BIO SCI 4900	Clinical Chemistry	5-10
BIO SCI 4901	Clinical Microscopy	1-3
BIO SCI 4902	Hematology and Coagulation	5-8
BIO SCI 4903	Serology Immunology	2-4
BIO SCI 4904	Clinical Microbiology	5-9
BIO SCI 4905	Blood Bank Immunohematology	2-4
BIO SCI 4906	Topics in Medical Technology	1-8

20 semester hours of chemistry to include:

CHEM 1100	Introduction To Laboratory Safety & Hazardous Materials	1
CHEM 1301 & CHEM 1319	Introductory Chemistry and General Chemistry Laboratory	4
CHEM 1320	General Chemistry II	3
CHEM 2210 & CHEM 2219	Organic Chemistry I and Organic Chemistry I Lab	4
CHEM 2220 & CHEM 2229	Organic Chemistry II and Organic Chemistry II Lab	4
CHEM 4610	General Biochemistry	3

2 semesters of College (Engineering) Physics and labs

PHYSICS 1145	College Physics I	4
or PHYSICS 1135	Engineering Physics I	
PHYSICS 2145	College Physics II	4
or PHYSICS 2135	Engineering Physics II	

Math and Statistics

MATH 1120	College Algebra	5
STAT 3425	Introduction to Biostatistics	4

12 semester hours of humanities, excluding foreign language, and to include:

ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 1160	Writing And Research	3

9 hours of social sciences, to include:

HISTORY 1100	Early Western Civilization	3
or HISTORY 1300	American History To 1877	
or HISTORY 1310	American History Since 1877	
or POL SCI 1200	American Government	

Justification for request

MATH 1140 removed, no longer offered

Supporting Documents

Course Reviewer Comments

Key: 377

Program Change Request

New Program Proposal

Date Submitted: 04/06/22 1:48 pm

Viewing: **PROPOSED : Human Factors
Psychology CT**

File: 390

Last edit: 04/06/22 1:48 pm

Changes proposed by: burnsde

Start Term

Fall 2022

Program Code

PROPOSED

Department

Psychological Science

Title

Human Factors Psychology CT

Program Requirements and Description

In Workflow

1. **RPSCYCHOL 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. **kristyg**

Approval Path

1. 04/13/22 6:11 pm
Susan Murray
(murray): Approved
for RPSYCHOL
Chair
2. 04/14/22 10:39 am
Marita Raper
(tibbettsmg):
Approved for CCC
Secretary
3. 04/14/22 10:47 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC
Chair

Human Factors Psychology Certificate

This certificate is designed to give students expertise in how people interact with engineered systems and devices. Students will increase their understanding of how to engage in human-centered design and better support interactions between humans and technology. This

certificate will help advance multiple career paths including human-focused paths to better understand technology and technology-focused paths to better understand human perspective.

Students will have greater expertise understanding and critically analyzing the intersection of technology design and implementation with human capacity and approaches, including the use of technology for communication, occupational health and safety standards, understanding and use of information systems, and using technology to connect to customers/the market.

Course requirements include the following:

PSYCH 5710	Advanced Human Factors	3
And 3 of the following:		
PSYCH 4720	Psychology of Social Technology	
PSYCH 5740	Occupational Health and Safety	
TCH COM 5530	Usability Studies	
IS&T 5885	Human-Computer Interaction and User Experience	
BUS 5150	Customer Focus and Satisfaction	

This program is open to all persons holding a bachelor's, master's, or doctorate degree in psychology, business, or a related field, with a preferred minimum of one year of professional employment experience. Minimum undergraduate GPA is 3.0.

Justification for request

A newly approved program.

Supporting Documents

[Graduate CT Human Factors Psychology.pdf](#)

[MS&T PC Feb 2022.pdf](#)

Course Reviewer Comments

Key: 390

Program Change Request

A deleted record cannot be edited

Program Deactivation Proposal

Date Submitted: 04/21/22 11:23 am

Viewing: **PSYMTRP-CT : Statistical Methods
Psych CT**

File: 305.8

Last approved: 07/29/21 9:07 am

Last edit: 04/22/22 1:41 pm

Changes proposed by: burnsde

Catalog Pages Using this Program

[Mathematics and Statistics](#)

[Psychology](#)

Start Term

Fall ~~2022~~ 2024

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. **kristyg**

Approval Path

1. 04/13/22 6:11 pm
Susan Murray
(murray): Approved
for RPSYCHOL
Chair
2. 04/20/22 11:40 am
Marita Raper
(tibbettsmg):
Rollback to Initiator
3. 04/22/22 1:27 pm
Susan Murray
(murray): Approved
for RPSYCHOL
Chair
4. 04/22/22 1:41 pm
Marita Raper
(tibbettsmg):
Approved for CCC
Secretary
5. 04/22/22 1:42 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC
Chair

History

1. Jun 13, 2019 by ershenb
2. Jul 1, 2020 by Devin Burns (burnsde)
3. Sep 15, 2020 by Crystal Wilson (wilsoncry)
4. May 5, 2021 by Devin Burns (burnsde)
5. Jul 29, 2021 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. 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.

The following two psychology courses will be required:

PSYCH 5201	Psychometrics
PSYCH 5202	Applied Psychological Data Analysis

And an additional two statistics courses chosen from these four:

STAT 5346	Regression Analysis
STAT 5353	Statistical Data Analysis
STAT 5643	Probability And Statistics
STAT 6344	Design And Analysis Of Experiments

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

This program has been discontinued.

Supporting Documents

Course Reviewer Comments

tibbettsmg (04/20/22 11:40 am): Rollback: please attach approvals and resubmit. MR

tibbettsmg (04/22/22 1:41 pm): Approved by MDHE on 4/1/22.

Key: 305

Program Change Request

Date Submitted: 04/05/22 3:49 pm

Viewing: **WATERSC-MS : Water Science and Engineering MS**

File: 345.8

Last approved: 06/10/21 4:09 pm

Last edit: 04/07/22 11:24 am

Changes proposed by: grotekr

Catalog Pages Using this Program

[Water Science and Engineering](#)

Start Term

Fall 2022 ~~2021~~

Program Code

WATERSC-MS

Department

Geosciences and Geological and Petroleum Engineering

Title

Water Science and Engineering MS

Program Requirements and 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. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. kristyg

Approval Path

1. 04/05/22 3:59 pm
Jeff Cawfield (jdc):
Approved for
RGEOENG Chair
2. 04/07/22 11:24 am
Marita Raper
(tibbetmsg):
Approved for CCC
Secretary
3. 04/19/22 8:51 am
Stephen Raper
(sraper): Approved
for Engineering
DSCC Chair

History

1. Jun 10, 2021 by
Sharon Lauck
(laucks)

Master of Science

Water Science and Engineering

The Water Science and Engineering (WSE) Master of Science (MS) degree requires a total of ~~30~~ **34** graduate credit hours beyond the B.S. degree for both thesis and non-thesis MS options. We encourage applications from students with undergraduate degrees from one of the seven participating programs (Biology, Chemistry, Chemical Engineering, Civil Engineering, Environmental Engineering, Geology and Geophysics, and Geological Engineering) or closely related degree programs. Graduate certificates in *Subsurface Water Resources* and/or *Surface Water Resources* can serve as an entry point into the WSE program.

The thesis option is comprised of the following:

- **Program Courses:** Students will select six courses (18hrs) from the Program Course List. Students must take at least one course from three different course categories and also take at least one course from three separate departments. Course categories include *Engineering Hydrology*, *Water Infrastructure and Remediation*, *Water Resources and the Environment*, and *Water Policy*.
- **Additional Courses:** Students will select two courses (6 hrs) from a combination of existing and newly developed graduate courses that are relevant to their degree plans. These courses must be approved by their advisor in consultation with their thesis committee and will be chosen based on their specific career goals and interests.
- ~~interests.~~
• ~~Graduate Seminar: Students will be required to take one hour of graduate seminar from any of the affiliated disciplines.~~ **Thesis Research:** Students will complete six hours of research credit.

The non-thesis option is identical to the thesis option except that the research hours are replaced with six hours of additional coursework. The non-thesis WSE MS-degree is offered both on campus and online.

Engineering Hydrology		
CIV ENG 6331	Advanced Hydraulics And Hydraulic Engineering	3
CIV ENG 5338	Hydrologic Engineering	3
CIV ENG 5330	Unsteady Flow Hydraulics	3
CIV ENG 5331	Hydraulics Of Open Channels	3
CIV ENG 5333	Intermediate Hydraulic Engineering	3
CIV ENG 5337	River Mechanics And Sediment Transport	3
CIV ENG 6338	Advanced Hydrology	3
GEO ENG 5320	Groundwater Modeling	3
GEO ENG 5331	Subsurface Hydrology	3
GEO ENG 5332	Fundamentals of Groundwater Hydrology	3
GEO ENG 6331	<u>Advanced Subsurface Hydrology</u>	<u>3</u>

Water Infrastructure and Remediation		
CIV ENG 5335	Water Infrastructure Engineering	3
CIV ENG 6340	Urban Hydrology	3
CIV ENG 6335	Hydraulic Structures	3
BIO SCI 6463	Bioremediation	3
CHEM ENG 4210	Biochemical Reactors	3

CHEM ENG 5110	Intermediate Chemical Reactor Design	3
CIV ENG 5332	Transport Processes in Environmental Flows	3
CIV ENG 5360	Water Resources And Wastewater Engineering	3
ENV ENG 5630	Remediation of Contaminated Groundwater And Soil	3
ENV ENG 5635	Phytoremediation and Natural Treatment Systems: Science and Design	3
ENV ENG 5619	Environmental Engineering Design	3
ENV ENG 6612	Biological Operations In Environmental Engineering Systems	3
ENV ENG 6611	Physicochemical Operations In Environmental Engineering Systems	3
GEO ENG 6237	Advanced Geological & Geotechnical Design For Hazardous Waste Mgt	3
GEO ENG 5239	Groundwater Remediation	3
GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3

Water Resources and the Environment		
BIO SCI 4313	Introduction to Environmental Microbiology	3
BIO SCI 6313	Environmental Microbiology	3
BIO SCI 4383	Toxicology	3
BIO SCI 4363	Freshwater Ecology	3
BIO SCI 6363	Advanced Freshwater Ecology	3
BIO SCI 6383	Advanced Toxicology	3
CHEM ENG 5340	Principles of Environmental Monitoring	3
CHEM 4710	Principles Of Environmental Monitoring	3
CHEM 5710	Environmental Monitoring	3
ENV ENG 5605	Environmental Systems Modeling	3
ENV ENG 5642	Sustainability, Population, Energy, Water, and Materials	3
GEOLOGY 4431	Methods Of Karst Hydrogeology	3
GEOLOGY 4411	Hydrogeology	3
GEOLOGY 4451	Aqueous Geochemistry	3
GEO ENG 5153	Regional Geological Engineering Problems In North America	3
GEO ENG 5233	Risk Assessment In Environmental Studies	3
GEO ENG 5782	Environmental and Engineering Geophysics	3
GEO ENG 6736	Advanced Geophysical Methods	3

Water Policy		
CIV ENG 5640	Environmental Law And Regulations	3
CIV ENG 5650	Public Health Engineering	3
POL SCI 4500	Geopolitics and International Security	3
POL SCI 4320	Policy for Science, Technology, and Innovation	3
ECON 4440	Environmental And Natural Resource Economics	3

A written thesis and formal thesis defense are required for thesis-based MS-degree students. Entrance requirements are equivalent to the baseline university graduate student admission standards. The GRE exam is not required for internal degree applicants.

Justification for request

The Water Science and Engineering Faculty voted to add these courses, as they are appropriate inclusions in the program. We also decided to remove the seminar requirement and reduce the number of hours by one, as this requirement could not be filled online, and the degree is supposed to be available in both online and on-campus modes.

Supporting Documents

~~!Chancellor Provost Support Letter WSE.pdf~~

~~!Open Proposal_S&T MS Water Science and Engineering.pdf~~

~~!MDHE MST NP March 2021.pdf~~

Course Reviewer Comments

tibbetmsg (04/07/22 11:24 am): updated effective term to Fall 22. MR

Key: 345

Program Change Request

Date Submitted: 04/06/22 1:23 pm

Viewing: **WORKPSY-CT : Applied Workplace
Psych CT**

File: 304.13

Last approved: 09/15/20 2:31 pm

Last edit: 04/14/22 10:34 am

Changes proposed by: burnsde

Catalog Pages Using this Program

[Psychology](#)

Start Term

Fall 2022 ~~2020~~

Program Code

WORKPSY-CT

Department

Psychological Science

Title

Applied Workplace Psych CT

Program Requirements and Description

In Workflow

1. **RPSYCHOL Chair**
2. **CCC Secretary**
3. **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. **Evie Sherlock**

Approval Path

1. 04/13/22 6:11 pm
Susan Murray
(murray): Approved
for RPSYCHOL
Chair
2. 04/14/22 10:34 am
Marita Raper
(tibbettsmg):
Approved for CCC
Secretary
3. 04/20/22 3:56 pm
Marita Raper
(tibbettsmg):
Rollback to
RPSYCHOL Chair
for Pending CCC
Agenda post
4. 04/22/22 1:27 pm
Susan Murray
(murray): Approved
for RPSYCHOL
Chair
5. 04/22/22 1:45 pm
Marita Raper
(tibbettsmg):
Approved for CCC
Secretary

6. 04/22/22 1:46 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for Social
 Sciences DSCC
 Chair

History

1. Oct 25, 2019 by
ershenb
2. Jul 1, 2020 by
Devin Burns
(burnsde)
3. Sep 15, 2020 by
Crystal Wilson
(wilsoncry)

Applied Workplace Psychology

The applied workplace psychology graduate certificate is designed to serve as a recruitment tool for the industrial-organizational psychology MS program. This program will offer students a set of foundational courses in industrial and organizational psychology. Students who pass all four courses with a cumulative GPA grade of 3.0 B or better in each course can gain entry to the I-O psychology MS program with the other application requirements being waived. The included courses cover an introductory I-O seminar course, an advanced research methods course, a course on job analysis and performance appraisal and a small group dynamics course which will examine groups and teams in organizations.

All four courses included in the applied workplace psychology certificate curriculum will be offered once per year. All of these courses are available both on-campus as well as via distance.

Fall Courses:

PSYCH 5020	Introduction to Industrial-Organizational Psychology	3
PSYCH 5210	Advanced Research Methods	3

Spring Courses:

PSYCH 5601	Small Group Dynamics	3
PSYCH 5700	Job Analysis and Performance Management	3

Admissions requirements for the applied workplace psychology certificate are available at <https://psych.mst.edu/academic-programs/graduate/admission-requirements/>

Students admitted to the applied workplace psychology certificate program will have non-degree graduate status, however, they will earn graduate credit for the course they complete. If the student completes the four-course sequence with a cumulative GPA grade of 3.0 B or better, better in each of the courses taken, they, upon application, will be admitted to the M.S. degree program in industrial organizational psychology. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degrees. Students who do not have all of the prerequisite courses necessary to begin the courses in the applied workplace psychology certificate

program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

Justification for request

Supporting Documents

Course Reviewer Comments

tibbettsmg (04/14/22 10:34 am): updated term to FS22. MR

tibbettsmg (04/20/22 3:56 pm): Rollback: DSCC was left out of the workflow. Need to rollback to get DSCC approval before adding to CCC agenda. Please approve again.

Key: 304

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/07/22 12:13 pm

Viewing: **ART 2001.001 : Marvel Cinematic**

**University – Media, culture, and philosophy
via the superhero**

File: 4871

Last edit: 04/13/22 12:33 pm

Changes proposed by: msp7h

Requested	Spring 2023
Effective Change Date	
Department	Arts, Languages, & Philosophy
Discipline	Art (ART)
Course Number	2001
Topic ID	001
Experimental Title	

In Workflow

1. **RPHILOSΟ 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. 04/07/22 1:31 pm
Audra Merfeld-Langston
(audram):
Approved for RPHILOSΟ Chair
2. 04/13/22 12:34 pm
Marita Raper
(tibbettsmg):
Approved for CCC Secretary
3. 04/13/22 2:00 pm

Petra Dewitt
(dewittp):
Approved for Arts
& Humanities
DSCC Chair

Marvel Cinematic University – Media, culture, and philosophy via the superhero

Experimental Marvel Cinema University

Abbreviated

Course Title

Instructors Taylor Gruenloh

Experimental

Catalog

Description

The MCU has cemented itself as one of the top brands in modern culture. Why are superhero films more popular than ever? How have these comic book stories from the 1930s come to dominate the global box office and video streaming services? This course will analyze media, form, and style of the most continuous story line in cinema history.

Prerequisites

None

Field Trip

Statement

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

Total: 3

Justification for

new course:

Students are asking for more film course offerings and the study topic is extremely popular.

Semester(s)
previously taught

Co-Listed
Courses:

Course Reviewer
Comments

Key: 4871

[Preview Bridge](#)

Course Change Request

New Experimental Course Proposal

Date Submitted: 02/09/22 10:21 am

Viewing: **CHEM ENG 5001.015 : Colloid**

Chemistry and Interfacial Engineering

File: 4794

Last edit: 04/13/22 12:29 pm

Changes proposed by: luksc

Requested Fall 2022

Effective Change

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 5001

Topic ID 015

Experimental

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. CAT entry
8. Registrar

Approval Path

1. 02/26/21 1:52 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
2. 03/04/21 9:31 am
kristyg: Rollback
to Initiator
3. 07/19/21 3:42 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
4. 07/20/21 11:37
am
Marita Raper

(tibbettsmg):

Rollback to

Initiator

5. 08/17/21 11:16

am

Hu Yang (huyang):

Approved for

RCHEMENG Chair

6. 08/17/21 12:14

pm

Marita Raper

(tibbettsmg):

Approved for CCC

Secretary

7. 09/08/21 3:23 pm

Stephen Raper

(sraper): Rollback

to Initiator

8. 04/12/22 12:01

pm

Hu Yang (huyang):

Approved for

RCHEMENG Chair

9. 04/13/22 12:29

pm

Marita Raper

(tibbettsmg):

Approved for CCC

Secretary

10. 04/19/22 9:05 am

Stephen Raper

(sraper):

Approved for

Engineering DSCC

Chair

Colloid Chemistry and Interfacial Engineering

Experimental Colloid Chemistry

Abbreviated

Course Title

Instructors Monday Okoronkwo

Experimental

Catalog

Description

Fundamentals of colloid and surface chemistry, and interfacial engineering relevant to scientific frontiers including adhesives and coatings, separations, catalysis, adsorption and ion exchange, alloys, cement, ceramics, fibers, polymers, pollution control, food products, medicines, pharmaceuticals, microelectronics, mining and petroleum recovery, and more.

Prerequisites

Chemistry 1320, Senior standing or Graduate standing.

Field Trip

Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Justification for

new course:

New elective course in area of research of Dr Okoronkwo with multidisciplinary relevance.

Removed all co-lists

Semester(s)

previously taught

n/a

Co-Listed

Courses:

Course Reviewer

Comments

kristyg (03/04/21 9:31 am): Rollback: Dr. Luks, at this time we cannot approve this course with all of the co-lists. All departments will need to be in agreeance and have approval. At this time in the EC stage this many co-lists can cause a lot of issues. And if your discipline did not have a successful enrollment that could mean that you could possibly not be the primary.

tibbettsmg (07/20/21 11:37 am): Rollback: rollback per KGF email on 7/20. mt

sraper (09/08/21 3:23 pm): Rollback: Christi, There are objections to the current prereq in that non Chem eng majors could take it w/out appropriate background. Can you reconsider and submit again please.

tibbettsmg (04/13/22 12:29 pm): updated term to FS22. MR

Key: 4794

[Preview Bridge](#)

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/05/22 10:28 am

Viewing: **COMP ENG 4001.001 : Practicum in
Computer Engineering**

File: 4870

Last edit: 04/12/22 11:58 am

Changes proposed by: kte

Requested	Fall 2022
Effective Change Date	
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	4001
Topic ID	001
Experimental 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. CAT entry
8. Registrar

Approval Path

1. 04/05/22 10:27
am
Marita Raper
(tibbettsmg):
Rollback to
Initiator
2. 04/05/22 3:10 pm
Watkins
(watkins):
Approved for
RELECENG Chair
3. 04/12/22 11:58
am
Marita Raper

(tibbettsmg):
 Approved for CCC
 Secretary
 4. 04/19/22 9:06 am
 Stephen Raper
 (sraper):
 Approved for
 Engineering DSCC
 Chair

Practicum in Computer Engineering

Experimental Practicum in CpE
 Abbreviated
 Course Title
 Instructors R. Joe Stanley

Experimental

Catalog

Description

Students on an approved internship or cooperative education assignment with industry will complete a project designed by the Computer Engineering Undergraduate Coordinator and employer. The project selected must be related to topics in one or more of the prerequisite courses. Only one instance of this course can be applied to BS degree requirements.

Prerequisites

Comp Eng 3110 or Comp Eng 3150. The same work period cannot receive credit for this course and Comp Eng 3002 or Elec Eng 3002 or Elec Eng 4380.

Field Trip

Statement

No field trips

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

Justification for

new course:

Justification: This course is created in response to the dean's request to find ways to reduce students' to graduation. Modeled on the existing EE 4380, Practicum in Automation Engineering.

Semester(s)

previously taught

None

Co-Listed

Courses:

Course Reviewer

Comments

tibbettsmg (04/05/22 10:27 am): Rollback: rollback per request.

tibbettsmg (04/12/22 11:58 am): updated prereq formatting. Removed "department permission" as that is a given.

Key: 4870

[Preview Bridge](#)

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/05/22 10:28 am

Viewing: **ELEC ENG 4001.001 : Practicum in**

Electrical Engineering

File: 4869

Last edit: 04/12/22 11:56 am

Changes proposed by: kte

Requested Fall 2022

Effective Change

Date

Department Electrical and Computer Engineering

Discipline Electrical Engineering (ELEC ENG)

Course Number 4001

Topic ID 001

Experimental

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. CAT entry
8. Registrar

Approval Path

1. 04/05/22 10:27 am
Marita Raper (tibbettsmg):
Rollback to Initiator
2. 04/05/22 3:10 pm
Watkins (watkins):
Approved for RELECENG Chair
3. 04/12/22 11:56 am
Marita Raper

(tibbettsmg):
 Approved for CCC
 Secretary
 4. 04/19/22 9:06 am
 Stephen Raper
 (sraper):
 Approved for
 Engineering DSCC
 Chair

Practicum in Electrical Engineering

Experimental Practicum in EE
 Abbreviated
 Course Title
 Instructors Kelvin Erickson

Experimental

Catalog

Description

Students on an approved internship or cooperative education assignment with industry will complete a project designed by the Electrical Engineering Undergraduate Coordinator and employer. The project selected must be related to topics in one or more of the prerequisite courses. Only one instance of this course can be applied to BS degree requirements.

Prerequisites

Elec Eng 3100 or Elec Eng 3250 or Elec Eng 3320 or Elec Eng 3430 or Elec Eng 3500 or Elec Eng 3540 or Elec Eng 3600. The same work period cannot receive credit for this course and Elec Eng 3002 or Elec Eng 4380 or Comp Eng 3002.

Field Trip

Statement

No field trips

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

Justification for

new course:

This course is created in response to the dean's request to find ways to reduce students' to graduation. Modeled on the existing EE 4380, Practicum in Automation Engineering.

Semester(s)

previously taught

None

Co-Listed

Courses:

Course Reviewer

Comments

tibbettsmg (04/05/22 10:27 am): Rollback: rollback per request. mr

tibbettsmg (04/12/22 11:56 am): updated prereq formatting. removed "department permission" as that is a given.

Key: 4869

[Preview Bridge](#)

Course Change Request

New Experimental Course Proposal

Date Submitted: 04/19/22 8:44 am

Viewing: **TCH COM 3001.002 : Video Design and Editing**

File: 4873

Last edit: 04/20/22 11:44 am

Changes proposed by: reardond

Requested Spring 2023

Effective Change

Date

Department English and Technical Communication

Discipline Technical Communication (TCH COM)

Course Number 3001

Topic ID 002

Experimental

Title

In Workflow

1. **REGLISH 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. 04/19/22 10:32 am
Kristine Swenson (kswenson):
Approved for REGLISH Chair
2. 04/20/22 11:45 am
Marita Raper (tibbettsmg):
Approved for CCC Secretary
3. 04/20/22 11:49

am

Petra Dewitt

(dewittp):

Approved for Arts

& Humanities

DSCC Chair

Video Design and Editing

Experimental Video Design and Editing

Abbreviated

Course Title

Instructors Daniel Reardon, Elizabeth Reardon

Experimental

Catalog

Description

Principles of visual design, vocal narration, and audio selection to create videos for both academic and professional purposes. Course includes extensive practice in video production.

Prerequisites

English 1600 or Tch Com 1600.

Field Trip

Statement

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

Total: 4

Justification for

new course:

Students have been requesting a video design and editing course. Businesses and industries also increasingly desire video production skills for communication specialists.

Semester(s)

previously taught

0

Co-Listed

Courses:

Course Reviewer

Comments

tibbettsmg (04/20/22 11:44 am): formatted prerequisites and removed "permission of instructor" as that is not needed. MR

Key: 4873

[Preview Bridge](#)