

Campus Curricula Committee Meeting Agenda

April 14, 2026

8:15am - 9:30am, Fulton Hall 120

(For Faculty Senate Meeting of May 14, 2026)

Review of submitted Course Change forms:

File: 10369 ARCH ENG 5851 : Renewable Energy Storage Systems for Buildings

File: 10377 CER ENG 2010 : Seminar

File: 5697 CER ENG 2315 : Ceramic Materials Laboratory I ~~I-Characterization Of Materials~~

File: 5698 CER ENG 2325 : Ceramic Materials Laboratory II ~~Glass And Ceramic Processing~~

File: 10378 CER ENG 3010 : Seminar

File: 5703 CER ENG 3315 : Ceramic Processing Laboratory ~~Lab I~~

File: 10399 CER ENG 3425 : Ceramic Properties Laboratory

File: 5708 CER ENG 4096 : Materials Senior Design I

File: 5709 CER ENG 4097 : Materials Senior Design II

File: 4413 CER ENG 4410 : Introduction to Integrated Computational Materials Engineering

File: 2417 CER ENG 5230 : Glass Science And Engineering

File: 5726 CER ENG 5420 ~~6220~~ : Optical Properties Of Materials

File: 2041 CHEM ENG 2110 : Chemical Engineering Thermodynamics I

File: 4280 CHEM ENG 3101 : Fundamentals of Transport in Chemical and Biochemical Engineering

File: 1451 CIV ENG 2601 : Fundamentals of Environmental Engineering and Science

File: 468 COMP SCI 1570 : Introduction To C++ Programming

File: 10372 COMP SCI 1973 : Introduction to Python Programming

File: 10373 COMP SCI 1983 : Python Programming Laboratory

File: 10397 COMP SCI 5603 : Internet Security

File: 10398 COMP SCI 5604 : Ethical Hacking

File: 10400 COMP SCI 5605 : AI Security

File: 10262 EDUC 5500 : Evidence-Based Practices For Literacy Instruction

File: 10249 EDUC 5565 : Comprehensive Literacy Program Development

File: 10248 EDUC 6560 : Teacher Development in Literacy Instruction

File: 4765 EDUC 6570 : Literacy Assessments

File: 10257 EDUC 6581 : Literacy Specialist Internship I

File: 10389 EDUC 6582 : Literacy Specialist Internship II

File: 10390 EDUC 6583 : Literacy Specialist Internship III

File: 10391 ENGLISH 6001 : Special Topics

File: 6599 GEO ENG 5090 : Geological Engineering Design

File: 1250 GEO ENG 5331 : Subsurface hydrology

File: 4119 GEO ENG 5415 : Soil Mechanics for Geoprosessionals

File: 6626 GEO ENG 6235 : Advanced Concepts Of Environmental Geological Engineering

File: 1342 GEOLOGY 2610 : Mineralogy And Crystallography

File: 6650 GEOLOGY 2611 : Physical Mineralogy And Petrology
 File: 6656 GEOLOGY 3410 : Introduction To Geochemistry
 File: 41 MIN ENG 3913 : Mineral Identification and Exploration
 File: 10376 MS&E 5330 : Composite Materials Science and Engineering
 File: 9131 NUC ENG 4203 : Nuclear Reactor Engineering **Physics+**
 File: 4189 PET ENG 3320 : Rock and Fluid Properties **Petrophysics**
 File: 1045 PET ENG 3330 : Formation Evaluation
 File: 2614 PET ENG 3520 : Petroleum Reservoir Engineering
 File: 1241 PET ENG 4531 : Natural Gas Engineering
 File: 1233 PET ENG 4590 : Subsurface Energy Economics

Review of submitted Program Change forms:

File: 292 AI-CT : AI, Mach Lrn & Auto for Bus CT
 File: 239 ANA&DTA-MI : Business Analytics and Data Science
 File: 16 CHEM-BS : Chemistry BS
 File: 28 CMP SC-BS : Computer Science BS
 File: 25 CP ENG-MI : Computer Engineering Minor
 File: 149 CR ENG-BS : Ceramic Engineering BS
 File: 152 CV ENG-BS : Civil Engineering BS
 File: 295 CYBERMG-CT : Cybersecurity and Information Assurance management CT
 File: 247 CYBERMG-MI : Cybersecurity Management and Information Assurance Minor
 File: 39 ECON-BS : Economics BS
 File: 44 ENG MG-BS : Engineering Management BS
 File: 394 FETECH-CTU : Financial Economics and Technology – CTU
 File: 156 GE ENG-BS : Geological Engineering BS
 File: 64 GL&GPH-BS : Geology and Geophysics BS
 File: 81 MARKET-MI : Marketing Minor
 File: 223 MATH-MI : Mathematics Minor
 File: 86 MC ENG-BS : Mechanical Engineering BS
 File: 95 MI ENG-BS : Mining Engineering BS
 File: 90 MT ENG-BS : Metallurgical Engineering BS
 File: 108 PE ENG-BS : Petroleum Engineering BS
 File: 438 PROPOSED : Biochemistry BS
 File: 426 PROPOSED : Literacy Coaching CT
 File: 322 SYS ENG-CT : Systems Engineering CT

Review of submitted Experimental Course forms:

File: 552 ARCH ENG 5001.018 : Indoor Environmental Quality
 File: 555 BUS 5001.017 : Marketing Strategies for Leaders
 File: 556 GERMAN 3001.002 : Advanced German Literature
 File: 557 MECH ENG 6001.010 : Ballistic Theory
 File: 558 PHILOS 3001.011 : Ethics of Artificial Intelligence
 File: 554 PHYSICS 4001.005 : Computational Astrophysics

New Business:

- CCC Calendars

Course Change Request

New Course Proposal

Date Submitted: 01/29/26 4:33 pm

Viewing: **ARCH ENG 5851 : Renewable Energy**

Storage Systems for Buildings

Last edit: 03/09/26 10:00 am

Changes proposed by: Stuart Baur (baur)

Requested Effective Date	Fall 2026
Department	Civil Engineering (RCIVILEN)
Discipline	Architectural Engineering (ARCH ENG)
Course Number	5851
Title	Renewable Energy Storage Systems for Buildings
Abbreviated Course Title	Ren Energy Stor Sys for Bldg
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 03/06/26 5:48 am
Subhas Venayagamoorthy (skv7d8): Approved for RCIVILEN Chair
2. 03/09/26 10:00 am
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/14/26 10:06 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson (hjh9x): Approved

This course covers the fundamentals of energy storage, including identifying key components and functions, comparing various incentives, selecting and sizing various photovoltaic systems, and performing a cost-benefit analysis.

Prerequisite(s):

Mech Eng 2527 or Equivalent to Thermal Analysis.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

The course has been taught for the two prior summers with enrollment numbers of 8 and 5 respectively. With the course being online and interest in the industry in energy storage systems increasing it is anticipated the enrollment numbers will continue to increase in the next 5 to 10 years.

Semesters Previously Offered

Term(s) Offered as

experimental

Summer 2024, Summer 2025.

Previous Course

Code

Is this a MOTR

Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 9:09 am): Placed period after the prereq. And selected graded for grading basis.

Hannah Johnson (hjh9x) (03/09/26 10:00 am): This course was taught as an EC in the summer of 2024 with enrollment of 8 students, and in the summer of 2025 with enrollment of 5 students. Changed ME in prereq, to Mech Eng.

Key: 10369

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/02/26 2:05 pm

Viewing: **CER ENG 2010 : Seminar**

Last edit: 03/02/26 2:05 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

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

Requested Effective Date	Fall 2026
Department	Materials Science & Engineering (RMATSENG)
Discipline	Ceramic Engineering (CER ENG)
Course Number	2010
Title	Seminar
Abbreviated Course Title	Seminar
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 03/02/26 2:54 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/20/26 7:57 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/20/26 12:05 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:56 pm

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

An introduction to the study of ceramic engineering at Missouri S&T. Students will become acquainted with faculty, facilities, student and professional organizations, and available resources for personal and professional development.

Prerequisite(s):

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Recitation/Seminar/Discussion	0.5

Total: 0.5

Required for Majors Yes

Elective for Majors No

Communication Intensive No

Communication Emphasized No

Grading Basis

Repeatable No

Justification

First of a two-part seminar series required for Ceramic Engineering students approved by faculty vote (Feb 2026).

Semesters Previously Offered

Term(s) Offered as

experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer
Comments

Key: 10377

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/04/26 4:04 pm

Viewing: **CER ENG 2315 : Ceramic Materials**

Laboratory I - Characterization Of Materials

Last edit: 03/13/26 7:09 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

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

Other Courses
referencing this
course

[In The Catalog Prerequisites:](#)

[CER ENG 2325 : Ceramic Materials Laboratory II](#)

Requested Effective Date Spring 2027

Department Materials Science & Engineering (RMATSENG)

Discipline Ceramic Engineering (CER ENG)

Course Number 2315

Title
Ceramic Materials Laboratory I - ~~Characterization Of Materials~~

Abbreviated Course Title Cer Materials Lab I

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/04/26 4:56 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/13/26 7:10 pm
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/16/26 11:09 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Laboratory-based introduction to ceramic materials. Emphasis is placed on safety, technical communication, and error analysis. ~~Laboratory experience in collection, beneficiation, and characterization of ceramic raw materials; granulation, compaction, and sintering of particulate materials; and characterization at an introductory level. Standard laboratory practice including safety, report writing, and error analysis are also emphasized.~~

Prerequisite(s):

Sophomore standing.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Laboratory	<u>1</u> 2
<u>Lecture</u>	<u>1</u>

Total: 2

Required for Majors Yes ~~No~~

Elective for Majors No

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification

Updating to LAB 1.0 + LEC 1.0 to reflect actual contact hours. Updated description to reflect modular format. Revised to Required for Majors, Communication Emphasized.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/13/26 4:19 pm): Per email from David Lipke, the course is not changing, and is therefore changing less than 50%.

Crystal Wilson (wilsoncry) (03/13/26 7:09 pm): Changed effective term to spring 2027 per email from department 3/13/2026.

Key: 5697

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/04/26 4:05 pm

Viewing: **CER ENG 2325 : Ceramic Materials**

Laboratory II ~~Glass And Ceramic Processing~~

Last edit: 03/16/26 4:06 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

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

Other Courses
referencing this
course

[In The Catalog Prerequisites:](#)

[CER ENG 3315 : Ceramic Processing Laboratory](#)

[CER ENG 3325 : Ceramic Processing Lab II](#)

Requested Effective Date Spring 2027

Department Materials Science & Engineering (RMATSENG)

Discipline Ceramic Engineering (CER ENG)

Course Number 2325

Title
Ceramic Materials Laboratory II ~~Glass And Ceramic Processing~~

Abbreviated Course Title Cer Materials Lab II

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/04/26 4:56 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/13/26 7:11 pm
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/16/26 11:10 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Laboratory exploration of the ~~experience in design~~, processing, design, and characterization of ~~of~~ glasses and engineered ceramics. ~~Glasses are formulated, melted and characterized to correlate composition and properties. Clay-based ceramics are formulated to meet performance specifications, prepared by slip casting/extrusion, and fired.~~

Prerequisite(s):

A "C" or better grade of "C" or better in Cer Eng 2315.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Laboratory	<u>1</u> 2
<u>Lecture</u>	<u>1</u>

Total: 2

Required for Majors Yes ~~No~~

Elective for Majors No

Communication No

Intensive

Communication Yes

Emphasized

Grading Basis Graded

Repeatable No

Justification

Updating to LAB 1.0 + LEC 1.0 to reflect actual contact hours. Updated description to reflect modular format. Revised to Required for Majors, Communication Emphasized.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/13/26 4:20 pm): Per email from David Lipke, the course is not changing and is therefore changing less than 50%.

Crystal Wilson (wilsoncry) (03/13/26 7:11 pm): Changed effective term to spring 2027 per email from department 3/13/2026.

Crystal Wilson (wilsoncry) (03/16/26 4:06 pm): Updated pre-req to say A grade of "C" or better.

Key: 5698

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/02/26 2:11 pm

Viewing: **CER ENG 3010 : Seminar**

Last edit: 03/02/26 2:11 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

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

Requested Effective Date	Fall 2026
Department	Materials Science & Engineering (RMATSENG)
Discipline	Ceramic Engineering (CER ENG)
Course Number	3010
Title	Seminar
Abbreviated Course Title	Seminar
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 03/02/26 2:54 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/20/26 7:57 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/20/26 12:05 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

A professional development seminar for junior-level ceramic engineering students.

Prerequisite(s):

Cer Eng 2010 or consent of instructor.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Recitation/Seminar/Discussion	0.5

Total: 0.5

Required for Majors Yes

Elective for Majors No

Communication No

Intensive

Communication No

Emphasized

Grading Basis

Repeatable No

Justification

Second of a two-part seminar series required for Ceramic Engineering students approved by faculty vote (Feb 2026).

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course

Code

Is this a MOTR

Course?

Reviewer

Comments

Key: 10378

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/04/26 4:05 pm

Viewing: **CER ENG 3315 : Ceramic Processing**

Laboratory Lab+

Last edit: 03/16/26 4:06 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

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

Other Courses
referencing this
course

In The Catalog Prerequisites:

[CER ENG 4096 : Materials Senior Design I](#)

[MET ENG 4096 : Materials Senior Design I](#)

Requested Effective Date Spring 2027

Department Materials Science & Engineering (RMATSENG)

Discipline Ceramic Engineering (CER ENG)

Course Number 3315

Title
Ceramic Processing [Laboratory Lab+](#)

Abbreviated Course Title Cer Processing Lab +

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/04/26 4:56 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/13/26 7:14 pm
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/16/26 11:10 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Applied study ~~The first half of~~ fabrication ~~a two-semester sequence that gives students practical knowledge of the methods~~ and sintering techniques used for advanced ~~in the fabrication of~~ ceramics.

Prerequisite(s):

A "C" or better grade of "C" or better in Cer Eng 2325.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Laboratory	<u>1</u> 2
<u>Lecture</u>	<u>1</u>

Total: 2

Required for Majors Yes ~~No~~

Elective for Majors No

Communication No

Intensive

Communication Yes

Emphasized

Grading Basis Graded

Repeatable No

Justification

Updating to LAB 1.0 + LEC 1.0 to reflect actual contact hours. Updated description to reflect modular format. Revised to Required for Majors, Communication Emphasized.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/13/26 4:20 pm): Per email from David Lipke, the course is not changing and is therefore changing less than 50%.

Crystal Wilson (wilsoncry) (03/13/26 7:14 pm): Changed effective term to spring 2027 per email from department 3/13/2026.

Crystal Wilson (wilsoncry) (03/16/26 4:06 pm): Updated pre-req to say A grade of "C" or better.

Key: 5703

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/04/26 4:08 pm

Viewing: **CER ENG 3425 : Ceramic Properties**

Laboratory

Last edit: 03/06/26 2:26 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

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

Requested Effective Date Fall 2026

Department Materials Science & Engineering (RMATSENG)

Discipline Ceramic Engineering (CER ENG)

Course Number 3425

Title
Ceramic Properties Laboratory

Abbreviated Course Title Ceram Prop Lab

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/04/26 4:56 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/20/26 7:57 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/20/26 12:05 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Laboratory measurement and analysis of fundamental ceramic properties through use of standard test methods.

Prerequisite(s):

A grade of "C" or better in Cer Eng 3315.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Laboratory	1
Lecture	1

Total: 2

Required for Majors Yes

Elective for Majors No

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification

Ceramic properties modules previously located in Cer Eng 2325, 3315, and former 3325 lab have been re-organized into a coherent properties-emphasized lab that replaces 3325 in the sequence.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 2:26 pm): Added graded to grading basis.

Key: 10399

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/05/26 9:29 am

Viewing: **CER ENG 4096 : Materials Senior Design I**

Also listed as: **MET ENG 4096 / SEMI ENG 4096**

Last approved: 07/01/25 6:04 am

Last edit: 03/13/26 7:15 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

CER ENG 4096:

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

[MAT S E-MI: Materials Science and Engineering Minor](#)

MET ENG 4096:

[MAT S E-MI: Materials Science and Engineering Minor](#)

[MT ENG-BS: Metallurgical Engineering BS](#)

SEMI ENG 4096:

[SEMI EN-BS: Semiconductor Engineering BS](#)

Other Courses
referencing this
course

In The Catalog Prerequisites:

CER ENG 4096:

[CER ENG 4097 : Materials Senior Design II](#)

[MET ENG 4097 : Materials Senior Design II](#)

MET ENG 4096:

[CER ENG 4097 : Materials Senior Design II](#)

[MET ENG 4097 : Materials Senior Design II](#)

In Workflow

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

Approval Path

1. 03/05/26 9:29 am
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/13/26 7:15 pm
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/16/26 11:10 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm

Requested Effective Spring 2027

Date
 Department Materials Science & Engineering (RMATSENG)
 Discipline Ceramic Engineering (CER ENG)
 Course Number 4096

Hannah Johnson
 (hjh9x): Approved
 for Pending CCC
 Agenda post

Title
 Materials Senior Design I
 Abbreviated Course Matls Senior Design I

History

1. Jul 1, 2025 by David Lipke (lipke)

Title
 Co-Listed Course MET ENG 4096 Department
 Materials Science &
 Engineering
 (RMATSENG)
 SEMI ENG 4096 Department
 Materials Science &
 Engineering
 (RMATSENG)

Catalog Description

Overview of the methods, approaches, and techniques required to execute materials related capstone senior design projects. Formation of teams, assignment of projects, review of department curriculum concepts and topics, and comprehensive project management skills needed to complete projects will be used as means to learn the design process.

Prerequisite(s):

A grade of "C" or better in Met Eng 3125 and Met Eng 2125, or Cer Eng 3315 or Semi Eng 3101.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	<u>2</u> 3
<u>Laboratory</u>	<u>1</u>

Total: 3

Required for Majors Yes

Elective for Majors No

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification

Modified from LEC 3.0 to LAB 1.0 & LEC 2.0 to reflect actual contact hours.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (03/13/26 7:15 pm): Changed effective term to spring 2027 per email from department 3/13/2026.

Key: 5708

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/05/26 9:29 am

Viewing: **CER ENG 4097 : Materials Senior Design II**

Also listed as: **MET ENG 4097 / SEMI ENG 4097**

Last approved: 07/01/25 6:04 am

Last edit: 03/13/26 7:15 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

CER ENG 4097:

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

[MAT S E-MI: Materials Science and Engineering Minor](#)

MET ENG 4097:

[MAT S E-MI: Materials Science and Engineering Minor](#)

[MT ENG-BS: Metallurgical Engineering BS](#)

SEMI ENG 4097:

[SEMI EN-BS: Semiconductor Engineering BS](#)

Requested Effective Date	Spring 2027	
Department	Materials Science & Engineering (RMATSENG)	
Discipline	Ceramic Engineering (CER ENG)	
Course Number	4097	
Title	Materials Senior Design II	
Abbreviated Course Title	Matls Senior Design II	
Co-Listed Course	MET ENG 4097	Department

In Workflow

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

Approval Path

1. 03/05/26 9:30 am
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/13/26 7:16 pm
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/16/26 11:10 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm

Materials Science &
Engineering
(RMATSENG)

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

SEMI ENG 4097

Department

Materials Science &
Engineering
(RMATSENG)

History

1. Jul 1, 2025 by David
Lipke (lipke)

Catalog Description

A continuation of the Materials Senior Design I. Students working in groups will complete a capstone design project including process and product simulation and/or fabrication, safety aspects, environmental impact and capital and operating economics.

Prerequisite(s):

A grade of "C" or better in either Cer Eng 4096 or Met Eng 4096 or Semi Eng 4096.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Laboratory	<u>2</u> 3
<u>Lecture</u>	<u>1</u>

Total: 3

Required for Majors Yes

Elective for Majors No

Communication No

Intensive

Communication Yes

Emphasized

Grading Basis Graded

Repeatable No

Justification

Modified from LAB 3.0 to LAB 2.0 & LEC 1.0 to reflect actual contact hours

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (03/13/26 7:15 pm): Changed effective term to spring 2027 per email from department 3/13/2026.

Key: 5709

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/02/26 4:30 pm

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

Last approved: 04/28/20 6:01 am

Last edit: 03/20/26 8:12 am

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

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

Requested Effective Date Spring 2027

Department Materials Science & Engineering (RMATSENG)

Discipline Ceramic Engineering (CER ENG)

Course Number 4410

Title
Introduction to Integrated Computational Materials Engineering

Abbreviated Course Title Intro to ICME

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/03/26 8:15 am
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/20/26 7:57 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/20/26 12:06 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Jun 26, 2017 by F.
Scott Miller (smiller)
2. Apr 28, 2020 by F.
Scott Miller (smiller)

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

Prerequisite(s):

A grade of "C" or better in ~~both~~ Cer Eng 3230 and Math ~~3304~~ 3304, and in either Comp Sci 1972 and Comp Sci 1982, ~~Cer Eng 2110~~ or Comp Sci 1973 and Comp Sci 1983. ~~Met Eng 2110~~.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	2
Laboratory	1

Total: 3

Required for Majors Yes

Elective for Majors No

Communication No
Intensive

Communication No
Emphasized

Grading Basis Graded

Repeatable No

Justification

The Cer Eng curriculum will require a programming elective beginning FS26 in part to better prepare students for this course. The prerequisite replaces the introductory course Cer Eng 2110, making it more accessible to students in other programs.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/10/26 1:25 pm): Changed COMP SCI's in prereqs to Comp Sci.

Crystal Wilson (wilsoncry) (03/20/26 8:12 am): Changed term to spring 2027 as this change in pre-req is an affecting change. The deadline for affecting changes was October 17, 2025.

Key: 4413

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/03/26 2:44 pm

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

Last approved: 09/28/20 6:01 am

Last edit: 03/03/26 2:44 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

[ADV MAT-CT: Advanced Engineering Materials Certificate](#)

Requested Effective Date Fall 2026

Department Materials Science & Engineering (RMATSENG)

Discipline Ceramic Engineering (CER ENG)

Course Number 5230

Title
Glass Science And Engineering

Abbreviated Course Title [Glass Sci Eng](#) ~~Glass Science And Engr~~

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/02/26 2:54 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/03/26 10:24 am
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/03/26 2:43 pm
Theresa Swift (thswift): Rollback to Initiator
4. 03/03/26 4:55 pm
Sridhar Seetharaman

- (ssgw8): Approved for RMATSENG Chair
- 5. 03/12/26 3:35 pm
Crystal Wilson
(wilsoncry): Approved for CCC Secretary
- 6. 03/16/26 11:10 am
Theresa Swift
(thswift): Approved for Engineering DSCC Chair
- 7. 03/30/26 3:55 pm
Hannah Johnson
(hjh9x): Approved for Pending CCC Agenda post

History

- 1. Sep 28, 2020 by F. Scott Miller (smiller)

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

Prerequisite(s):

Senior or graduate standing. ~~Consent of Instructor required.~~

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors	No
Elective for Majors	Yes
Communication Intensive	<u>No</u>
Communication Emphasized	<u>No</u>
Grading Basis	Graded
Repeatable	No

Justification

Replaces 'consent of instructor' prerequisite with 'senior or graduate standing'.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/03/26 10:24 am): Answered no for CI and CE.

Theresa Swift (thswift) (03/03/26 2:43 pm): Rollback: Department requests to update prerequisite courses.

Key: 2417

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/02/26 1:25 pm

Viewing: **CER ENG 5420 ~~6220~~ : Optical**

Properties Of Materials

Also listed as: ~~CER-ENG-6220~~

Formerly known as: **CER ENG 6220**

Last edit: 03/06/26 2:29 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

CER ENG 5420:

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

Requested Effective Date	Fall 2026
Department	Materials Science & Engineering (RMATSENG)
Discipline	Ceramic Engineering (CER ENG)
Course Number	<u>5420</u> 6220
Title	Optical Properties Of Materials
Abbreviated Course Title	Opt Properties Materials
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 03/02/26 2:54 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/20/26 7:58 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/20/26 12:06 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

The objective of this course is to give the student a fundamental understanding of the structure-optical property relationships exhibited by isotropic and anisotropic materials. Topics will include the wave/particle nature of light, how light interacts with materials, color, and applications such as lasers, fiber optic communication systems, electro-optics, and integrated optics.

Prerequisite(s):

Physics 2135 or 2111 and Math 2222.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

Renumbering to 5000-level for undergraduate accessibility in new Functional Ceramics emphasis area.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 2:29 pm): Selected yes for elective for majors, and no for CI and CE.

Key: 5726

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/04/26 7:09 am

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

Last approved: 07/23/24 6:38 am

Last edit: 03/10/26 10:16 am

Changes proposed by: Christi Luks (luksc)

Programs

referencing this course

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

[BIOMED-BS: Biomedical Engineering BS](#)

[SEMI EN-BS: Semiconductor Engineering BS](#)

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

Other Courses

referencing this course

[In The Catalog Prerequisites:](#)

[BME 3100 : Fundamentals of Transport in Biomedical Engineering](#)

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

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

[CHEM ENG 5315 :](#)

Requested Effective Date Fall 2026

Department Chemical and Biochemical Engineering (RCHEMENG)

Discipline Chemical Engineering (CHEM ENG)

Course Number 2110

In Workflow

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

Approval Path

1. 03/04/26 7:20 am
Ryan Gilbert (rggnx): Approved for RCHEMENG Chair
2. 03/10/26 10:21 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/14/26 10:05 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm
Hannah Johnson

Title

Chemical Engineering Thermodynamics I

Abbreviated Course Title Chem Engr Thermo I

Title

Co-Listed Course

Catalog Description

(hjh9x): Approved for Pending CCC Agenda post

History

- 1. May 4, 2015 by Christi Luks (luksc)
- 2. Jun 16, 2022 by Christi Luks (luksc)
- 3. Jul 23, 2024 by Christi Luks (luksc)

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.

Prerequisite(s):

Preceded ~~or accompanied~~ by [Physics 1135](#) ~~Chem Eng 2100~~ and [preceded or accompanied by Math 2222](#) and Math 3304.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors Yes

Elective for Majors No

Communication Intensive No

Communication Emphasized No

Grading Basis Graded

Repeatable

No

Justification

Widening the prerequisites to allow all BME students to be eligible for the course, Phys 1135 was an implicit prerequisite.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 2:30 pm): Selected no for CI and CE.

Crystal Wilson (wilsoncry) (03/10/26 10:16 am): Spelt out the word Physics.

Key: 2041

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/04/26 7:10 am

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

Last approved: 11/27/23 6:01 am

Last edit: 03/06/26 2:31 pm

Changes proposed by: Christi Luks (luksc)

Programs
referencing this
course

[CH ENG-BS: Chemical Engineering BS](#)
[SEMI EN-BS: Semiconductor Engineering BS](#)
[EV ENG-BS: Environmental Engineering BS](#)

Other Courses
referencing this
course

[In The Catalog Prerequisites:](#)
[CHEM ENG 3131 : Separations in Chemical and Biochemical Engineering](#)
[CHEM ENG 3141 : Process Operations in Chemical and Biochemical Engineering](#)
[CHEM ENG 5100 : Intermediate Transport Phenomena](#)
[NUC ENG 4257 : Two-phase Flow in Energy Systems - I](#)

Requested Effective Date	Fall 2026
Department	Chemical and Biochemical Engineering (RCHEMENG)
Discipline	Chemical Engineering (CHEM ENG)

In Workflow

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

Approval Path

1. 03/04/26 7:20 am
Ryan Gilbert (rggnx): Approved for RCHEMENG Chair
2. 03/10/26 10:43 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/14/26 10:06 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm
Hannah Johnson

Course Number 3101

(hjh9x): Approved for Pending CCC Agenda post

Title
Fundamentals of Transport in Chemical and Biochemical Engineering

Abbreviated Course Transport Phenomena

Title

Co-Listed Course

History

1. May 24, 2016 by Daniel Forciniti (forcinit)
2. Jun 16, 2022 by Christi Luks (luksc)
3. Nov 27, 2023 by Christi Luks (luksc)

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.

Prerequisite(s):

A grade of "C" or better in Math 2222, Math 3304, ~~3304~~ and Chem Eng 2100, and Chem Eng 2110.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	4

Total: 4

Required for Majors Yes

Elective for Majors No

Communication No
Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

This change is necessary because of the modified prereqs for ChE 2110. This was previously an implicit prerequisite.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 2:31 pm): Selected no for CI and CE.

Key: 4280

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/03/26 1:15 pm

Viewing: **CIV ENG 2601 : Fundamentals of Environmental Engineering and Science**

Also listed as: **ENV ENG 2601**

Last approved: 02/18/26 6:04 am

Last edit: 03/09/26 10:15 am

Changes proposed by: William Showalter (wes)

Programs
referencing this
course

CIV ENG 2601:

[CV ENG-BS: Civil Engineering BS](#)

[ENV SCI-BS: Environmental Science BS](#)

[ES&P-CTU: Environmental Policy and Sustainability CTU](#)

ENV ENG 2601:

[ENV SCI-BS: Environmental Science BS](#)

[ES&P-CTU: Environmental Policy and Sustainability CTU](#)

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

[GL&GPH-BS: Geology and Geophysics BS](#)

Other Courses
referencing this
course

In The Catalog Prerequisites:

CIV ENG 2601:

[ARCH ENG 5665 : Indoor Air Pollution](#)

[BIO SCI 5313 : Pathogenic Microbiology](#)

[CIV ENG 3615 : Water And Wastewater Engineering](#)

[CIV ENG 5605 : Environmental Systems Modeling](#)

[CIV ENG 5650 : Public Health Engineering](#)

[CIV ENG 5665 : Indoor Air Pollution](#)

[CIV ENG 5670 : Solid Waste Management](#)

[ENV ENG 3615 : Water And Wastewater Engineering](#)

In Workflow

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

Approval Path

1. 03/06/26 5:45 am
Subhas Venayagamoorthy (skv7d8): Approved for RCIVILEN Chair
2. 03/10/26 10:44 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/14/26 10:05 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm
Hannah Johnson

[ENV ENG 5605 : Environmental Systems Modeling](#)

[ENV ENG 5650 : Public Health Engineering](#)

[ENV ENG 5665 : Indoor Air Pollution](#)

[ENV ENG 5670 : Solid Waste Management](#)

ENV ENG 2601:

[CIV ENG 2602 : Biological Fundamentals Of Environmental Engineering](#)

[ENV ENG 2602 : Biological Fundamentals Of Environmental Engineering](#)

(hjh9x): Approved for Pending CCC Agenda post

History

1. Feb 9, 2015 by Mark Fitch (mfitch)
2. Apr 3, 2017 by Mark Fitch (mfitch)
3. Oct 26, 2021 by Mark Fitch (mfitch)
4. Aug 7, 2024 by Evie Sherlock (esdk3)
5. Feb 18, 2026 by Crystal Wilson (wilsoncry)

Requested Effective Date	Fall 2026		
Department	Civil Engineering (RCIVILEN)		
Discipline	Civil Engineering (CIV ENG)		
Course Number	2601		
Title	Fundamentals of Environmental Engineering and Science		
Abbreviated Course Title	Fund Of Env Engr & Sci		
Co-Listed Course	ENV ENG 2601	Department	Civil Engineering (RCIVILEN)

Catalog Description

Course discusses fundamental chemical, physical, and biological principles in environmental engineering and science. Topics include environmental phenomena, aquatic pollution and control, solid waste management, air pollution and control, water and wastewater treatment systems, sustainability and life cycle analyses.

Prerequisite(s):

Chem 1301, Chem [1305, Chem](#) 1310, or [Chem](#) ~~Chem~~ 1351; Math 1211 or Math 1214.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Laboratory	1
Lecture	2

Total: 3

Required for Majors Yes

Elective for Majors No

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

Civil accepts either Chem 1305 or 1310 for the degree now and 1305 is acceptable as a prerequisite for CE 2601.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/09/26 10:15 am): Added 'Chem' to the prereq of Chem 1305.

Key: 1451

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/04/26 2:24 pm

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

Programming

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

Last edit: 03/06/26 11:09 am

Changes proposed by: Venkata Sriram Siddhardh Nadendla (nadendla)

Programs

referencing this
course

[AE ENG-BS: Aerospace Engineering BS](#)

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

[BIOINFO-MI: Bioinformatics Minor](#)

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

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

[FR ENG-UN: Foundational Engineering and Computing](#)

[CMP SC-BS: Computer Science BS](#)

[CMP SC-MI: Computer Science Minor](#)

[CES-MI: Computational Earth Sciences Minor](#)

[PROPOSED: Data Science BS](#)

[ENG MG-BS: Engineering Management BS](#)

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

Other Courses

referencing this
course

In The Catalog Prerequisites:

[AERO ENG 5139 : Computational Fluid Dynamics](#)

[AERO ENG 5449 : Robotic Manipulators and Mechanisms](#)

[AERO ENG 5830 : Applied Compt Methods](#)

[BIO SCI 5323 : Bioinformatics](#)

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

[COMP ENG 3151 : Digital Engineering Lab II](#)

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. 03/04/26 2:26 pm
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
2. 03/06/26 11:09 am
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/10/26 12:50 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm
Hannah Johnson (hjh9x): Approved for Pending CCC

History

1. Aug 5, 2019 by tauritzd
2. Jul 27, 2020 by Peizhen Zhu (zhupe)

[COMP SCI 1200 : Discrete Mathematics for Computer Science](#)
[COMP SCI 1575 : Data Structures](#)
[COMP SCI 1580 : Introduction To Programming Laboratory](#)
[COMP SCI 2501 : Java and Object Oriented Design](#)
[COMP SCI 5700 : Bioinformatics](#)
[GEOPHYS 3211 : Introduction To Geophysical Data Analysis](#)
[IS&T 3423 : Database Management](#)
[IS&T 4261 : Information Systems Project Management](#)
[IS&T 5680 : Digital Media Development and Interactive Design](#)
[MATH 5601 : Introduction to Numerical Analysis](#)
[MECH ENG 3313 : Machine Dynamics](#)
[MECH ENG 3411 : Modeling and Analysis of Dynamic Systems](#)
[MECH ENG 3525 : Heat Transfer](#)
[MECH ENG 5139 : Computational Fluid Dynamics](#)
[MECH ENG 5449 : Robotic Manipulators and Mechanisms](#)
[MECH ENG 5763 : Computer Aided Design: Theory and Practice](#)
[MECH ENG 5830 : Applied Compt Methods](#)
[STAT 4210 : Introduction to Statistical Data Science](#)

Requested Effective Date	Fall 2026
Department	Computer Science (RCOMPSCI)
Discipline	Computer Science (COMP SCI)
Course Number	1570
Title	Introduction To C++ Programming
Abbreviated Course Title	Intro To C++ Programming
Co-Listed Course	

Catalog Description

Object-Oriented Programming design and development in C++. Emphasis placed on good programming practices. Topics include syntax/semantics, operators, control flow/decision branching, memory management, functions, file I/O, C-strings, arrays, pointers, classes, templates, inheritance, polymorphism, and exception handling. This course is programming intensive.

Prerequisite(s):

A grade of "C" or better in Comp Sci 1500 or in both of Comp Sci 1971 and Comp Sci 1981, or in both of ~~and accompanied by~~ Comp Sci 1973 and Comp Sci 1983. ~~1580.~~

Corequisite(s):

Accompanied by Comp Sci 1580.

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors Yes

Elective for Majors No

Communication Intensive No

Communication Emphasized No

Grading Basis Graded

Repeatable No

Justification

Updated the prerequisites to include the new Python course sequence labeled Comp Sci 1973 and Comp Sci 1983

Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer
Comments

Hannah Johnson (hjh9x) (03/06/26 11:09 am): Added period after the prereq.

Key: 468

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/04/26 2:22 pm

Viewing: **COMP SCI 1973 : Introduction to Python Programming**

Last edit: 03/06/26 12:00 pm

Changes proposed by: Venkata Sriram Siddhardh Nadendla (nadendla)

Programs
referencing this
course

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

[CHEM-BS: Chemistry BS](#)

[PROPOSED: Biochemistry BS](#)

[MT ENG-BS: Metallurgical Engineering BS](#)

Requested Effective Date	Fall 2026
Department	Computer Science (RCOMPSCI)
Discipline	Computer Science (COMP SCI)
Course Number	1973
Title	Introduction to Python Programming
Abbreviated Course Title	Python Programming
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 03/04/26 2:27 pm
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
2. 03/06/26 12:05 pm
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/14/26 10:05 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:55 pm
Hannah Johnson (hjh9x): Approved for Pending CCC

Programming design and development using Python for non-CS majors. Strong emphasis placed on algorithmic problem solving and applications in diverse fields. Covers foundational concepts - variables, logical/relational/arithmetic operators, decision branching, loops, functions, file I/O, data structures, output formatting and plotting, alongside good programming practices. No prior programming experience required.

Prerequisite(s):

A grade of "C" or better in one of Math 1211 or Math 1214.

Corequisite(s):

Accompanied by Comp Sci 1983.

Credit Hours

Credit Hours

	Credit Type	Credit Hours
Lecture		2

Total: 2

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

This service course is created upon request from multiple departments in both CEC and CASE.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course

Code

Is this a MOTR

Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 12:00 pm): Added period after co-reqs. Selected yes for elective for majors. Selected graded for grading basis.

Key: 10372

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/04/26 2:22 pm

Viewing: **COMP SCI 1983 : Python Programming Laboratory**

Last edit: 03/16/26 2:16 pm

Changes proposed by: Venkata Sriram Siddhardh Nadendla (nadendla)

Programs
referencing this
course

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

[CHEM-BS: Chemistry BS](#)

[PROPOSED: Biochemistry BS](#)

[MT ENG-BS: Metallurgical Engineering BS](#)

Requested Effective Date	Fall 2026
Department	Computer Science (RCOMPSCI)
Discipline	Computer Science (COMP SCI)
Course Number	1983
Title	Python Programming Laboratory
Abbreviated Course Title	Python Programming Lab
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 03/04/26 2:27 pm
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
2. 03/06/26 12:05 pm
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/14/26 10:05 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson (hjh9x): Approved for Pending CCC

Practical application of concepts learned in Comp Sci 1973. Hands-on instruction in Python developing, debugging and testing programming projects.

Prerequisite(s):

A grade of "C" or better in one of Math 1211 or Math 1214.

Corequisite(s):

Accompanied by Comp Sci 1973.

Credit Hours

Credit Hours

Credit Type	Credit Hours
Laboratory	1

Total: 1

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

This service course is created upon request from multiple departments in both CEC and CASE.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR

Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 12:02 pm): Selected yes for elective for majors, added a period for the co-reqs. Selected graded for grading basis.

Hannah Johnson (hjh9x) (03/16/26 2:16 pm): Changed coreq. from Comp Sci 1983 to Comp Sci 1973.

Key: 10373

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/09/26 2:50 pm

Viewing: **COMP SCI 5603 : Internet Security**

Last edit: 03/09/26 2:50 pm

Changes proposed by: Venkata Sriram Siddhardh Nadendla (nadendla)

Programs
referencing this
course

[CMP SC-BS: Computer Science BS](#)

[CYBERSE-CT: Cyber Security CT](#)

Requested Effective Date Fall 2026

Department Computer Science (RCOMPSCI)

Discipline Computer Science (COMP SCI)

Course Number 5603

Title
Internet Security

Abbreviated Course Title Internet Security

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/04/26 2:35 pm
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
2. 03/09/26 2:47 pm
Crystal Wilson (wilsoncry): Rollback to Initiator
3. 03/09/26 3:03 pm
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
4. 03/11/26 3:45 pm
Hannah Johnson (hjh9x): Approved for CCC Secretary
5. 03/16/26 11:10 am

Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
6. 03/30/26 3:55 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

This course provides an in-depth study of both theoretical and practical foundations in various aspects of internet security, with particular emphasis on network defense. Topics covered include cryptographic algorithms, authentication and access control in networked environments, along with key security standards including Kerberos, PKI, IPsec, and TLS/SSL. The course also explores real-world applications like web security.

Prerequisite(s):

A grade of "C" or better in Comp Sci 4610.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

This CC form is submitted as this course is one of the required core courses in the newly proposed "Cybersecurity" emphasis area (refer the CC form submitted for the B.S. Comp Sci program) as well as one of the required core courses in the proposed changes to the graduate certificate in cybersecurity (refer the CC form submitted for the graduate certificate for cybersecurity). Currently, an experimental course is approved with the same title as Comp Sci 5001.080.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer
Comments

Hannah Johnson (hjh9x) (03/06/26 2:32 pm): Selected graded for grading basis.

Key: 10397

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/09/26 2:51 pm

Viewing: **COMP SCI 5604 : Ethical Hacking**

Last edit: 03/09/26 2:50 pm

Changes proposed by: Venkata Sriram Siddhardh Nadendla (nadendla)

Programs
referencing this
course

[CMP SC-BS: Computer Science BS](#)

[CYBERSE-CT: Cyber Security CT](#)

Requested Effective Date Fall 2026

Department Computer Science (RCOMPSCI)

Discipline Computer Science (COMP SCI)

Course Number 5604

Title
Ethical Hacking

Abbreviated Course Title Ethical Hacking

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/06/26 11:49 am
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
2. 03/09/26 2:47 pm
Crystal Wilson (wilsoncry): Rollback to Initiator
3. 03/09/26 3:03 pm
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
4. 03/11/26 3:46 pm
Hannah Johnson (hjh9x): Approved for CCC Secretary
5. 03/16/26 11:10 am

Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
6. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Introduction to hacking techniques and exploits for ethical purpose. Topics include pen test planning and scoping, rules of engagement, reconnaissance, port scanning, OS finger printing and version scanning, vulnerability scans, exploitation, post-exploitation strategies and pivoting, and password attacks.

Prerequisite(s):

A grade of "C" or better in COMP SCI 4610.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized No

Grading Basis Graded

Repeatable No

Justification

CC form submitted along with the DC form for the proposed emphasis area in cybersecurity for BS Comp Sci. - 3/4/2026

Motivation and Need: As cyber threats grow in scale and sophistication, there is increasing demand for professionals who understand both offensive and defensive cybersecurity techniques. COMP SCI 5604 Ethical Hacking provides students with practical knowledge of penetration testing methods used to identify and mitigate system vulnerabilities. The course covers core topics including reconnaissance, scanning, vulnerability assessment, exploitation, post-exploitation, pivoting, and password attacks, along with professional practices such as penetration test planning and rules of engagement. It emphasizes hands-on learning and the structured five-phase ethical hacking methodology to help students understand real-world attack processes and strengthen system defenses. This course supports cybersecurity workforce development, prepares students for careers in penetration testing and security analysis, and contributes to institutional goals such as NSA Centers of Academic Excellence (CAE-CD/CAE-CO) alignment and broader CISA cybersecurity readiness initiatives.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer
Comments

Hannah Johnson (hjh9x) (03/06/26 2:32 pm): Selected graded for grading basis.

Key: 10398

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/09/26 2:51 pm

Viewing: **COMP SCI 5605 : AI Security**

Last edit: 03/09/26 2:51 pm

Changes proposed by: Venkata Sriram Siddhardh Nadendla (nadendla)

Programs
referencing this
course

[CMP SC-BS: Computer Science BS](#)

[CYBERSE-CT: Cyber Security CT](#)

Requested Effective Date Fall 2026

Department Computer Science (RCOMPSCI)

Discipline Computer Science (COMP SCI)

Course Number 5605

Title
AI Security

Abbreviated Course Title AI Security

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/04/26 4:38 pm
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
2. 03/09/26 2:47 pm
Crystal Wilson (wilsoncry): Rollback to Initiator
3. 03/09/26 3:03 pm
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
4. 03/11/26 3:46 pm
Hannah Johnson (hjh9x): Approved for CCC Secretary
5. 03/16/26 11:11 am

Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
6. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

This course explores the emerging field of the vulnerabilities of Artificial Intelligence (AI) systems and how they can be defended against various threats. Topics include threat models such as white-box and black-box attacks, backdoor insertion, data poisoning techniques, as well as defense strategies such as adversarial training, input sanitization, and model watermarking.

Prerequisite(s):

A grade of "C" or better in Comp Sci 5400

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized No

Grading Basis Graded

Repeatable No

Justification

This CC form is attached with the DC form for BS Comp Sci, as this course is one of the electives listed in the cybersecurity emphasis area for BS Comp Sci. -- 3/4/2026

Artificial Intelligence has rapidly become a core component in critical systems from autonomous vehicles and healthcare diagnostics to cybersecurity and national defense. However, the current course offerings at Missouri S&T lack dedicated coverage of the security and trustworthiness of AI systems. Considering the recent research and real-world incidents, AI models are highly vulnerable to adversarial attacks, data poisoning, model theft, and backdoor manipulation, which can compromise system integrity and safety. This course addresses that urgent educational and research gap by training students to understand, exploit, and defend against such vulnerabilities through both theoretical and hands-on exploration. By integrating concepts from machine learning, cybersecurity, and software assurance, the proposed AI Security course will prepare students to develop resilient and trustworthy AI systems.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 2:33 pm): Selected graded for grading basis.

Key: 10400

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/03/26 1:44 pm

Viewing: **EDUC 5500 : Evidence-Based Practices For Literacy Instruction**

Last edit: 03/06/26 8:36 am

Changes proposed by: Beth Kania-Gosche (bakm75)

Programs

referencing this
course

[PROPOSED: Literacy Coaching](#)

Requested Effective Date Fall 2026

Department Education (REDUCATION)

Discipline Education (EDUC)

Course Number 5500

Title
Evidence-Based Practices For Literacy Instruction

Abbreviated Course Title Literacy Instruction

Co-Listed Course

Catalog 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. 04/02/25 1:14 pm
Beth Kania-Gosche (bakm75):
Approved for
REDUCATION Chair
2. 04/07/25 2:51 pm
Jade McCain (jm558v): Rollback to Initiator
3. 03/03/26 1:59 pm
Beth Kania-Gosche (bakm75):
Approved for
REDUCATION Chair
4. 03/06/26 8:36 am
Hannah Johnson (hjh9x): Approved

for CCC Secretary
 5. 03/06/26 9:10 am
 Cecil Eng Huang
 Chua (cchua):
 Approved for Social
 Sciences DSCC Chair
 6. 03/30/26 3:56 pm
 Hannah Johnson
 (hjh9x): Approved
 for Pending CCC
 Agenda post

This course will address in depth the foundational concepts of literacy instruction: phonological awareness, phonics, fluency, vocabulary, comprehension, and written language. Learners will examine the research supporting effective literacy instruction.

Prerequisite(s):

Education certificate or degree declared.

Corequisite(s):

Credit Hours

Credit Hours

	Credit Type	Credit Hours
Lecture		3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

This course is a prerequisite for the graduate certificate in Literacy Coaching. If teachers have a similar course in their previous coursework, they will not need to take this. This is foundational knowledge for the Literacy Coach graduate certificate. Students cannot coach others if they do not have the prerequisite knowledge themselves.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course

Code

Is this a MOTR
Course?

Reviewer

Comments

Jade McCain (jm558v) (04/07/25 2:51 pm): Rollback: Rollback per must be submitted with the DC form.

Hannah Johnson (hjh9x) (03/04/26 3:01 pm): Changed effective date to Fall 2026. Added graded to grading basis. Removed repeated 'graded' from the prereq.

Hannah Johnson (hjh9x) (03/06/26 8:36 am): Selected no for required for majors.

Key: 10262

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/03/26 1:43 pm

Viewing: **EDUC 5565 : Comprehensive Literacy**

Program Development

Last edit: 03/06/26 8:34 am

Changes proposed by: Beth Kania-Gosche (bakm75)

Programs

referencing this
course

[PROPOSED: Literacy Coaching](#)

Requested Effective Date Fall 2026

Department Education (REDUCATION)

Discipline Education (EDUC)

Course Number 5565

Title
 Comprehensive Literacy Program Development

Abbreviated Course Title Literacy Program Development

Co-Listed Course

Catalog 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. 03/05/25 11:04 am
Beth Kania-Gosche
(bakm75):
Approved for
REDUCATION Chair
2. 04/04/25 4:18 pm
Jade McCain
(jm558v): Rollback
to Initiator
3. 03/03/26 2:00 pm
Beth Kania-Gosche
(bakm75):
Approved for
REDUCATION Chair
4. 03/06/26 8:34 am
Hannah Johnson
(hjh9x): Approved

for CCC Secretary
 5. 03/06/26 9:10 am
 Cecil Eng Huang
 Chua (cchua):
 Approved for Social
 Sciences DSCC Chair
 6. 03/30/26 3:56 pm
 Hannah Johnson
 (hjh9x): Approved
 for Pending CCC
 Agenda post

In this course, participants will critically evaluate literacy programs, focusing on effective differentiation strategies and other essential components. They will learn systematic approaches for integrating evidence-based literacy practices into daily instruction. Additionally, learners will develop comprehensive plans for building partnerships with families and communities to enhance the overall impact of literacy programs.

Prerequisite(s):

Education degree or graduate certificate declared.

Corequisite(s):

Credit Hours

Credit Hours

	Credit Type	Credit Hours
Lecture		3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable

No

Justification

This is the second of four courses being proposed for a literacy coach graduate certificate. See explanation on first course submission.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer

Comments

Jade McCain (jm558v) (04/04/25 4:18 pm): Rollback: Rollback per needs to be submitted with the DC form.

Hannah Johnson (hjh9x) (03/04/26 3:12 pm): Changed effective date to Fall 2026, added a period after the prereqs, and changed grading basis to graded.

Hannah Johnson (hjh9x) (03/06/26 8:34 am): Selected yes for elective for majors, selected no for required for majors.

Key: 10249

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/03/26 1:43 pm

Viewing: **EDUC 6560 : Teacher Development in Literacy Instruction**

Last edit: 03/06/26 8:35 am

Changes proposed by: Beth Kania-Gosche (bakm75)

Programs

referencing this
course

[PROPOSED: Literacy Coaching](#)

Requested Effective Date Fall 2026

Department Education (REDUCATION)

Discipline Education (EDUC)

Course Number 6560

Title
Teacher Development in Literacy Instruction

Abbreviated Course Title Literacy Development

Co-Listed Course

Catalog 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. 03/05/25 11:04 am
Beth Kania-Gosche (bakm75):
Approved for REDUCATION Chair
2. 03/10/25 8:33 am
Jade McCain (jm558v): Rollback to REDUCATION Chair for CCC Secretary
3. 03/10/25 11:46 am
Beth Kania-Gosche (bakm75):
Approved for REDUCATION Chair
4. 04/04/25 4:18 pm

- Jade McCain
(jm558v): Rollback
to Initiator
- 5. 03/03/26 2:00 pm
Beth Kania-Gosche
(bakm75):
Approved for
REDUCATION Chair
- 6. 03/06/26 8:35 am
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
- 7. 03/06/26 9:10 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
- 8. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

This course delves into the foundational principles of adult learning, emphasizing effective peer coaching and mentorship models. Participants will examine strategies for fostering a growth mindset and designing targeted professional learning experiences. The curriculum includes an in-depth analysis of techniques for creating and sustaining professional learning communities aimed at teacher development, with a focus on aligning these efforts with school-wide literacy goals.

Prerequisite(s):

Education degree or graduate certificate declared.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

This course will be part of a literacy coach graduate certificate that is forthcoming. This course will also be used to submit a literacy specialist advanced educator license program proposal to DESE. For DESE and for several grants we've applied for, we would like these courses in the catalog even if the graduate certificate is still going through the approvals. Putting these courses in the catalog will allow us to partner with local school districts to offer them as needed. DESE does not accept special topics or experimental courses for certification, so we need the courses listed in the catalog with their official titles.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer

Comments

Jade McCain (jm558v) (03/10/25 8:33 am): Rollback: Rollback per CC form needs a four digit Course number.

Jade McCain (jm558v) (04/04/25 4:18 pm): Rollback: Rollback per needs to be submitted with the DC form.

Hannah Johnson (hjh9x) (03/05/26 4:18 pm): Selected graded for grading basis. Added period after the prereq.

Hannah Johnson (hjh9x) (03/06/26 8:35 am): Changed effective date to Fall 2026.

Key: 10248

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/03/26 1:43 pm

Viewing: **EDUC 6570 : Literacy Assessments**

Last edit: 03/06/26 8:36 am

Changes proposed by: Beth Kania-Gosche (bakm75)

Programs
referencing this
course

PROPOSED: Literacy Coaching

Requested Effective Date Fall 2026

Department Education (REDUCATION)

Discipline Education (EDUC)

Course Number 6570

Title
Literacy Assessments

Abbreviated Course Title Literacy Assessment

Co-Listed Course

Catalog 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. 02/04/21 2:52 pm
Beth Kania-Gosche
(bakm75):
Approved for
REDUCATION Chair
2. 02/08/21 11:11 am
Marita Raper
(tibbettsmg):
Rollback to Initiator
3. 03/14/25 2:05 pm
Beth Kania-Gosche
(bakm75):
Approved for
REDUCATION Chair
4. 04/04/25 4:19 pm
Jade McCain
(jm558v): Rollback

- to Initiator
5. 03/03/26 2:00 pm
Beth Kania-Gosche
(bakm75):
Approved for
REDUCATION Chair
 6. 03/06/26 8:37 am
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
 7. 03/06/26 9:11 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
 8. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Learners will gain familiarity with evidence-based literacy assessments through exploration of comprehensive literacy and language assessment systems and tools aligned with state and national standards. Learners will engage in collaboration and application activities to practice administration, interpretation, reporting, and communication of assessment outcomes in educational settings. Students will demonstrate understanding of the use of literacy and language assessments in instructional planning and data-based decision making in educational programs.

Prerequisite(s):

Graduate standing.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
<u>Lecture</u>	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized No

Grading Basis Graded

Repeatable No

Justification

This course is a requirement of the Literacy Coach graduate certificate. We need approved course numbers and titles for submission to DESE. They will not allow experimental courses to be used for certification.

Establishing this course in the catalog also allows us to participate in course sharing with other UM System graduate programs.

Semesters Previously Offered

Term(s) Offered as experimental

Previous Course Code

Is this a MOTR Course?

Reviewer

Comments

Marita Raper (tibbettsmg) (02/08/21 11:11 am): Rollback: All new course proposals must either be a requirement for a program/CT or be successfully taught twice as an EC. MT

Jade McCain (jm558v) (04/04/25 4:19 pm): Rollback: Rollback per needs to be submitted with the DC form.

Hannah Johnson (hjh9x) (03/05/26 4:04 pm): Added period after prereq. Added graded to grading basis.

Hannah Johnson (hjh9x) (03/06/26 8:36 am): Selected no for required for majors.

Course Change Request

New Course Proposal

Date Submitted: 03/03/26 1:42 pm

Viewing: **EDUC 6581 : Literacy Specialist**

Internship I

Last edit: 03/06/26 8:37 am

Changes proposed by: Beth Kania-Gosche (bakm75)

Programs

referencing this
course

[PROPOSED: Literacy Coaching](#)

Requested Effective Date Fall 2026

Department Education (REDUCATION)

Discipline Education (EDUC)

Course Number 6581

Title
Literacy Specialist Internship I

Abbreviated Course Title Literacy Internship I

Co-Listed Course

Catalog 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. 03/14/25 2:05 pm
Beth Kania-Gosche
(bakm75):
Approved for
REDUCATION Chair
2. 04/04/25 4:20 pm
Jade McCain
(jm558v): Rollback
to Initiator
3. 03/03/26 2:00 pm
Beth Kania-Gosche
(bakm75):
Approved for
REDUCATION Chair
4. 03/06/26 8:37 am
Hannah Johnson
(hjh9x): Approved

for CCC Secretary
 5. 03/06/26 9:12 am
 Cecil Eng Huang
 Chua (cchua):
 Approved for Social
 Sciences DSCC Chair
 6. 03/30/26 3:56 pm
 Hannah Johnson
 (hjh9x): Approved
 for Pending CCC
 Agenda post

Learners must work with both elementary and middle/secondary students, as well as their peers, in school-based settings. This work will include individuals and small groups, development of literacy intervention plans, creation of supportive literacy environments, and assessment. Internship hours must be appropriately documented and meet the state clock hour requirement for licensure.

Prerequisite(s):

Department must approve internship placement.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	1

Total: 1

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable

No

Justification

This course will be part of a literacy coach graduate certificate that is forthcoming. This course will also be used to submit a literacy specialist advanced educator license program proposal to DESE. For DESE and for several grants we've applied for, we would like these courses in the catalog even if the graduate certificate is still going through the approvals. Putting these courses in the catalog will allow us to partner with local school districts to offer them as needed. DESE does not accept special topics or experimental courses for certification, so we need the courses listed in the catalog with their official titles.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer

Comments

Jade McCain (jm558v) (04/04/25 4:20 pm): Rollback: Rollback per needs to be submitted with the DC form.

Hannah Johnson (hjh9x) (03/06/26 7:59 am): Added graded as grading basis.

Hannah Johnson (hjh9x) (03/06/26 8:37 am): Selected yes for elective for majors, selected no for required for majors.

Key: 10257

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/03/26 1:42 pm

Viewing: **EDUC 6582 : Literacy Specialist**

Internship II

Last edit: 03/06/26 8:37 am

Changes proposed by: Beth Kania-Gosche (bakm75)

Programs

referencing this
course

[PROPOSED: Literacy Coaching](#)

Requested Effective Date Fall 2026

Department Education (REDUCATION)

Discipline Education (EDUC)

Course Number 6582

Title
Literacy Specialist Internship II

Abbreviated Course Title Internship II

Co-Listed Course

Catalog 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. 03/03/26 2:01 pm
Beth Kania-Gosche (bakm75):
Approved for
REDUCATION Chair
2. 03/06/26 8:38 am
Hannah Johnson (hjh9x): Approved
for CCC Secretary
3. 03/06/26 9:12 am
Cecil Eng Huang Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson (hjh9x): Approved

This course is a continuation of Literacy Specialist Internship I. This course may be taken concurrently with EDUC 6581 and 6583.

Prerequisite(s):

Department permission required for internship placement.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	1

Total: 1

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

This is a required course to document the internship requirement for DESE.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course

Code

Is this a MOTR

Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 8:00 am): Capitalized the D and added a period in the prereqs. Added graded to the grading basis.

Hannah Johnson (hjh9x) (03/06/26 8:37 am): Selected yes for elective for majors, selected no for required for majors.

Key: 10389

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/03/26 1:41 pm

Viewing: **EDUC 6583 : Literacy Specialist**

Internship III

Last edit: 03/06/26 8:38 am

Changes proposed by: Beth Kania-Gosche (bakm75)

Programs

referencing this
course

[PROPOSED: Literacy Coaching](#)

Requested Effective Date Fall 2026

Department Education (REDUCATION)

Discipline Education (EDUC)

Course Number 6583

Title
Literacy Specialist Internship III

Abbreviated Course Title Internship III

Co-Listed Course

Catalog 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. 03/03/26 2:01 pm
Beth Kania-Gosche (bakm75):
Approved for
REDUCATION Chair
2. 03/06/26 8:38 am
Hannah Johnson (hjh9x): Approved
for CCC Secretary
3. 03/06/26 9:12 am
Cecil Eng Huang Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson (hjh9x): Approved

EDUC 6583 Literacy Specialist Internship III (1 credit hour)

This course is a continuation of Literacy Specialist Internship I and II. This course may be taken concurrently with the other Literacy Specialist internship courses. All three internship courses must be successfully completed with the appropriate balance of activities for Missouri certification.

Prerequisite(s):

Department permission required for internship placement.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	1

Total: 1

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized No

Grading Basis Graded

Repeatable No

Justification

This course is required to document internship hours for DESE.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course

Code

Is this a MOTR

Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 8:01 am): Added a period after the prereq. Selected yes for elective for majors, and no for CI and CE. Selected graded for grading basis per email from Beth Kania-Gosche.

Hannah Johnson (hjh9x) (03/06/26 8:38 am): Selected no for required for majors.

Key: 10390

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/04/26 10:01 am

Viewing: **ENGLISH 6001 : Special Topics**

Last edit: 03/05/26 8:35 am

Changes proposed by: Kathryn Dolan (dolankc)

Requested Effective Date	Fall 2026
Department	English & Tech Communication (REGLISH)
Discipline	English (ENGLISH)
Course Number	6001
Title	Special Topics
Abbreviated Course Title	Special Topics
Co-Listed Course	

Catalog 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. CAT entry
11. Peoplesoft

Approval Path

1. 03/04/26 10:02 am
Kathryn Dolan (dolankc): Approved for REGLISH Chair
2. 03/05/26 8:35 am
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/05/26 12:07 pm
Alejandra Sobrado (asgx4): Approved for Arts & Humanities DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson (hjh9x): Approved

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

Prerequisite(s):

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	0

Total: 0-6

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

To balance graduate course offerings between English and Tech Com. There are currently 5001s in both ENGLISH and TCH COM. At the moment, only TCH COM has the 6001 option.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course

Code

Is this a MOTR

Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/05/26 8:31 am): Selected yes for elective for majors, selected no for both CI and CE, selected graded for the grading basis.

Hannah Johnson (hjh9x) (03/05/26 8:35 am): Changed credit hours to 0 and changed total credits to 0-6, per email from Kathryn Dolan.

Key: 10391

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/04/26 3:38 pm

Viewing: **GEO ENG 5090 : Geological**

Engineering Design

Last edit: 03/10/26 11:10 am

Changes proposed by: Katherine Grote (grotekr)

Programs
referencing this
course

[GE ENG-BS: Geological Engineering BS](#)

Requested Effective Date	Spring 2027
Department	Earth Sciences and Engineering (RGEOSENG)
Discipline	Geological Engineering (GEO ENG)
Course Number	5090
Title	Geological Engineering Design
Abbreviated Course Title	Geol Engineering Design
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 03/04/26 3:39 pm
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
2. 03/11/26 8:36 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 03/16/26 11:12 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved

Geological engineering design is an open-ended project course requiring the collection of data, analysis and synthesis of that data and design of a socially acceptable, economical solution to the selected problem. Oral and written reports are required.

Prerequisite(s):

Geo Eng 5331, Geo Eng 5441, and Geo Eng 5443. ~~To be taken in the semester before graduation.~~

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Laboratory	1
Lecture	2

Total: 3

Required for Majors Yes ~~No~~

Elective for Majors No

Communication No

Intensive

Communication Yes

Emphasized

Grading Basis Graded

Repeatable No

Justification

These courses are all required for Geo Eng majors, and material used in these courses is needed to understand the material presented in Geo Eng 5090.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 2:35 pm): Added an 'and' and a period to the prereqs.

Selected yes for elective for majors. Selected yes for CI and CE.

Hannah Johnson (hjh9x) (03/10/26 11:06 am): Changed CI to no.

Hannah Johnson (hjh9x) (03/10/26 11:10 am): Selected yes for required for majors and no for elective for majors. Reorganized the prereqs listed.

Key: 6599

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/04/26 2:54 pm

Viewing: **GEO ENG 5331 : Subsurface Hydrology**

Last approved: 12/24/25 6:04 am

Last edit: 03/11/26 8:37 am

Changes proposed by: Katherine Grote (grotekr)

Programs
referencing this
course

[GE ENG-BS: Geological Engineering BS](#)
[GEO ENG-MS: GEOLOGICAL ENGINEERING MS](#)
[WATERSC-MS: Water Science and Engineering MS](#)
[GEO SCI-CT: Geoenvironmental Science and Engineering CT](#)
[SUB WAT-CT: Subsurface Water Resources Certificate](#)
[MINEREC-CT: Mine Reclamation CT](#)
[ENV SCI-BS: Environmental Science BS](#)
[PROPOSED: Environmental Conservation CT
26.1307:](#)
[EV ENG-BS: Environmental Engineering BS](#)
[GE ENG-MI: Geological Engineering Minor](#)
[GL&GPH-BS: Geology and Geophysics BS](#)
[GEOT-ME: Geotechnics ME](#)

Other Courses
referencing this
course

[In The Catalog Prerequisites:](#)
[GEO ENG 5239 : Groundwater Remediation](#)
[GEO ENG 5320 : Groundwater Modeling](#)
[GEO ENG 5381 : Intermediate Subsurface Hydrology And Contaminant
Transport Mechs](#)
[GEO ENG 6331 : Advanced Subsurface Hydrology](#)
[GEO ENG 6332 : Numerical Methods In Subsurface Flow](#)

In Workflow

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

Approval Path

1. 03/02/26 9:12 pm
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
2. 03/03/26 1:42 pm
Hannah Johnson
(hjh9x): Rollback to
Initiator
3. 03/04/26 2:55 pm
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
4. 03/11/26 8:37 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary

Requested Effective Date Spring 2027

Department Earth Sciences and Engineering (RGEOSENG)

Discipline Geological Engineering (GEO ENG)

Course Number 5331

Title Subsurface Hydrology

Abbreviated Course Title Subsurface Hydrology

Co-Listed Course

5. 03/16/26 11:12 am
Theresa Swift
(thswift): Approved for Engineering DSCC Chair

6. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved for Pending CCC Agenda post

Catalog Description

History

1. Jun 20, 2018 by Katherine Grote (grotekr)
2. Apr 30, 2020 by Katherine Grote (grotekr)
3. Oct 25, 2021 by David Borrok (borrokd)
4. Dec 24, 2025 by Crystal Wilson (wilsoncry)

Introduction to the theory and engineering concepts of the movement of subsurface fluids. Hydraulic characteristics of earth materials, aquifer characterization, and flow prediction. Engineering problems related to subsurface fluids.

Prerequisite(s):

Geo Eng 1150; Math 1214; Physics 1135 or Physics 1145. ~~1215.~~

Corequisite(s):

Credit Hours

Credit Hours

Credit Type

Credit Hours

Credit Type	Credit Hours
Lecture	2
Laboratory	1

Total: 3

Required for Majors Yes

Elective for Majors No

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

Some students are currently taking this course without the proper quantitative background and are subsequently struggling. Adding Physics 1135 or 1145 as a prerequisite will provide background on basic fluid mechanics that will help students succeed in Geo Eng 5331.

Additionally, all majors who are required to take Geo Eng 5331 are also required to take one of these Physics courses, so no students are being required to take an additional course.

The calculus requirement is being reduced from Math 1215 to Math 1214 because Math 1214 covers the level of calculus needed for this course.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/03/26 1:42 pm): Rollback: Rolling back because this is an affecting change and will need to be resubmitted for Fall 2027, along with the DC forms for the programs

referencing this course.

Crystal Wilson (wilsoncry) (03/11/26 8:37 am): Spelt out the word Physics in the pre-req.

Key: 1250

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/12/26 2:51 pm

Viewing: **GEO ENG 5415 : Soil Mechanics for Geoprosessionals**

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

Last edit: 03/12/26 2:51 pm

Changes proposed by: Katherine Grote (grotekr)

Programs
referencing this
course

[GEOT-ME: Geotechnics ME](#)

Requested Effective Date Spring 2027

Department Earth Sciences and Engineering (RGEOSENG)

Discipline Geological Engineering (GEO ENG)

Course Number 5415

Title
Soil Mechanics for Geoprosessionals

Abbreviated Course Title Soil Mechanics

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/07/26 6:16 am
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
2. 03/11/26 1:19 pm
Hannah Johnson
(hjh9x): Rollback to
Initiator
3. 03/12/26 3:00 pm
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
4. 03/16/26 2:29 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
5. 03/17/26 10:27 am

Theresa Swift
 (thswift): Approved
 for Engineering
 DSCC Chair
 6. 03/30/26 3:56 pm
 Hannah Johnson
 (hjh9x): Approved
 for Pending CCC
 Agenda post

History

1. Feb 9, 2015 by
 Norbert Maerz
 (norbert)

The basic principles of soil mechanics necessary for professionals to practice in the field of geoconstruction. Topics related to the practical aspects of engineering include: soil classification, index properties, water flow through soils, compaction, compressibility, and shear strength. These basic principles will be applied to real world problems. [Laboratory determination of the basic engineering properties of soils.](#)

Prerequisite(s):

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	<u>2</u> 3
<u>Laboratory</u>	<u>1</u>

Total: 3

Required for Majors No

Elective for Majors Yes

Communication [No](#)

Intensive

Communication No
Emphasized

Grading Basis Graded

Repeatable No

Justification

This course modification is made to add a lab component to Geo Eng 5415. Familiarity with the techniques used to determine soil properties is necessary to understand the uncertainty of these values and to appropriately apply this to geotechnical design. Students in Geo Eng 5415 have been learning these techniques in a lab for several years, but this time was scheduled outside of normal course hours. By adding a lab component, this learning becomes an officially scheduled part of the course.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/09/26 9:12 am): Selected no for CI and CE.

Hannah Johnson (hjh9x) (03/11/26 1:19 pm): Rollback: Rolling back because the change in credit type is an affecting change and can be submitted for Spring 2027.

Key: 4119

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/12/26 2:52 pm

Viewing: **GEO ENG 6235 : Advanced Concepts Of Environmental Geological Engineering**

Last edit: 03/12/26 2:52 pm

Changes proposed by: Katherine Grote (grotekr)

Programs
referencing this
course

[GEO ENG-MS: GEOLOGICAL ENGINEERING MS](#)

Requested Effective Date	Spring 2027
Department	Earth Sciences and Engineering (RGEOSENG)
Discipline	Geological Engineering (GEO ENG)
Course Number	6235
Title	Advanced Concepts Of Environmental Geological Engineering
Abbreviated Course Title	Adv Concepts Env Ge Eng
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 03/07/26 6:17 am
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
2. 03/11/26 1:20 pm
Hannah Johnson
(hjh9x): Rollback to
Initiator
3. 03/12/26 3:00 pm
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
4. 03/16/26 2:29 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
5. 03/17/26 10:27 am

Theresa Swift
 (thswift): Approved
 for Engineering
 DSCC Chair
 6. 03/30/26 3:56 pm
 Hannah Johnson
 (hjh9x): Approved
 for Pending CCC
 Agenda post

Application of the principles of geology to the solution of engineering problems in environmental protection and remediation. Topics will include the study of geologic processes and the evaluation of geologic materials as they affect the potential for groundwater contamination, susceptibility of soils to erosion, characterization of the geologic environment for site suitability and the analysis of the criteria necessary for the selection of technologies for minimizing environmental impact. In the laboratory, familiarity with current techniques for analyzing contaminated soil and environmental site assessment.

Prerequisite(s):

Graduate level course in environmental geologic studies.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	<u>2</u> 3
<u>Laboratory</u>	<u>1</u>

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

A lab section is requested to allow more hands-on learning, including demonstration of multiple types of equipment for environmental soil characterization. Additionally, students travel to a local field site and perform site characterization. These activities are most easily done in a laboratory section.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/09/26 9:13 am): Selected no for CI and CE.

Hannah Johnson (hjh9x) (03/11/26 1:20 pm): Rollback: Rolling back because the change in credit type is an affecting change and can be submitted for Spring 2027.

Key: 6626

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/05/26 12:42 pm

Viewing: **GEOLOGY 2610 : Mineralogy And Crystallography**

Last approved: 05/06/19 3:34 am

Last edit: 03/11/26 1:54 pm

Changes proposed by: Kelly Liu (liukh)

Programs

referencing this course

[ENV SCI-BS: Environmental Science BS](#)

[MT ENG-BS: Metallurgical Engineering BS](#)

Other Courses

referencing this course

In The Catalog Prerequisites:

[GEOLOGY 2620 : Igneous And Metamorphic Petrology.](#)

[GEOLOGY 3511 : Introduction to Mineral Deposits](#)

[GEOLOGY 4097 : Advanced Field Geology.](#)

[GEOLOGY 4441 : Applied Geochemistry](#)

[GEOLOGY 4521 : Ore Microscopy](#)

[GEOLOGY 5671 : Clay Mineralogy](#)

Requested Effective Date Spring 2027

Department Earth Sciences and Engineering (RGEOENG)

Discipline Geology (GEOLOGY)

Course Number 2610

Title Mineralogy And Crystallography

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. CAT entry
11. Peoplesoft

Approval Path

1. 03/05/26 12:59 pm Stephen Gao (sgao): Approved for RGEOENG Chair
2. 03/11/26 1:55 pm Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/16/26 11:11 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:56 pm Hannah Johnson (hjh9x): Approved

Abbreviated Course Title Mineral&Crystallography

for Pending CCC
Agenda post

Co-Listed Course

Catalog Description

History

1. May 6, 2019 by
wronk

An introduction to the study of minerals, including their systematic classification, crystallography, morphology, chemistry, societal use, geologic occurrence, environmental application and impact, and identification by means of their physical and chemical properties.

Prerequisite(s):

Chem 1305 or Chem 1310.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3
Laboratory	1

Total: 4

Required for Majors No ~~Yes~~

Elective for Majors Yes ~~No~~

Communication Intensive No

Communication Emphasized No

Grading Basis Graded

Repeatable No

Justification

At the request by the Department of Chemistry, the course requirement is being updated from Chem 1310 to Chem 1305. Chem 1305 is more appropriate for Geology & Geophysics students.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (03/11/26 1:54 pm): Per department request, added back Chem 1310 as an option for the departments who have this course on their DC, but still require Chem 1310.

Key: 1342

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/05/26 12:50 pm

Viewing: **GEOLOGY 2611 : Physical Mineralogy And Petrology**

Last edit: 03/11/26 1:57 pm

Changes proposed by: Kelly Liu (liukh)

Programs
referencing this
course

[GE ENG-BS: Geological Engineering BS](#)
[ENV SCI-BS: Environmental Science BS](#)
[GL&GPH-BS: Geology and Geophysics BS](#)
[GEOL-MI: Geology Minor](#)

Other Courses
referencing this
course

[In The Catalog Prerequisites:](#)
[GEOLOGY 3620 : Stratigraphy And Sedimentation](#)

Requested Effective Date	Spring 2027
Department	Earth Sciences and Engineering (RGEOSENG)
Discipline	Geology (GEOLOGY)
Course Number	2611
Title	Physical Mineralogy And Petrology
Abbreviated Course Title	Phys Mineralogy\Petrology
Co-Listed Course	

In Workflow

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

Approval Path

1. 03/05/26 12:59 pm
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
2. 03/11/26 1:58 pm
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 03/16/26 11:11 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved

An introduction to the study of physical mineralogy and petrology, overviewing systematic determination of minerals and rocks by means of their physical properties. Includes the recognition of crystal forms and field relationships of rocks. Course designed for non-geology majors, credit will not count towards a geology-geophysics degree.

Prerequisite(s):

Chem 1305 ~~1310 and Chem 1319~~ or Chem 1310, and Chem 1319; ~~1351~~; Geo Eng ~~1150~~ or Geology 1110 or Geo Eng 1150. ~~1110~~.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Laboratory	1
Lecture	2

Total: 3

Required for Majors Yes ~~No~~

Elective for Majors No

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

At the request by the Department of Chemistry, the course requirement is being updated from Chem 1310 to Chem 1305. Chem 1305 is more appropriate for Geology & Geophysics students. Chem 1351 has been removed as an alternative prerequisite because it is no longer listed in the catalog.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (03/11/26 1:57 pm): Per department request, added back Chem 1310 as an option for the departments who have this course on their DC, but still require Chem 1310.

Key: 6650

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/05/26 12:53 pm

Viewing: **GEOLOGY 3410 : Introduction To
Geochemistry**

Last edit: 03/11/26 2:00 pm

Changes proposed by: Kelly Liu (liukh)

Programs
referencing this
course

[FR ENG-UN: Foundational Engineering and Computing](#)
[ENV SCI-BS: Environmental Science BS](#)
[CES-MI: Computational Earth Sciences Minor](#)
[EV ENG-BS: Environmental Engineering BS](#)
[GL&GPH-BS: Geology and Geophysics BS](#)

Other Courses
referencing this
course

[In The Catalog Prerequisites:](#)
[CHEM ENG 2100 : Chemical Engineering Material & Energy Balances](#)
[ENV ENG 3603 : Chemical Fundamentals Of Environmental Engineering](#)
[GEOLOGY 4441 : Applied Geochemistry](#)
[GEOLOGY 4451 : Aqueous Geochemistry](#)
[GEOLOGY 5631 : Carbonate Petrology](#)
[GEOLOGY 6351 : Advanced Geochemistry](#)
[In The Catalog Description:](#)
[GEOLOGY 5661 : Advanced Stratigraphy and Basin Evolution](#)

Requested Effective Date	Spring 2027
Department	Earth Sciences and Engineering (RGEOSENG)
Discipline	Geology (GEOLOGY)

In Workflow

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

Approval Path

1. 03/05/26 12:59 pm
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
2. 03/11/26 2:01 pm
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 03/16/26 11:11 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved

Course Number 3410

for Pending CCC

Title

Agenda post

Introduction To Geochemistry

Abbreviated Course Intro To Geochemistry

Title

Co-Listed Course

Catalog Description

Application of basic chemical principals towards investigations of element distributions in geologic systems. Emphasis on origin of elements in our Solar System, element distribution during planetary formation, phase equilibria, rock-water interactions, thermodynamic principles, environmental and isotope geochemistry.

Prerequisite(s):

Chem 1305 or Chem 1310.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors Yes ~~No~~

Elective for Majors No

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

At the request by the Department of Chemistry, the course requirement is being updated from

Chem 1310 to Chem 1305. Chem 1305 is more appropriate for Geology & Geophysics students.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (03/11/26 2:00 pm): Per department request, added back Chem 1310 as an option for the departments who have this course on their DC, but still require Chem 1310.

Key: 6656

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/06/26 1:30 pm

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

Last approved: 01/29/24 6:01 am

Last edit: 03/10/26 8:01 am

Changes proposed by: Stephen Casey (caseysc)

Programs
referencing this
course

[GE ENG-BS: Geological Engineering BS](#)

[GEOL-MI: Geology Minor](#)

[MI ENG-BS: Mining Engineering BS](#)

[MI ENG-MI: Mining Engineering Minor](#)

Requested Effective Date	Fall 2026
Department	Mining and Explosives Engineering (RMINENG)
Discipline	Mining Engineering (MIN ENG)
Course Number	3913
Title	Mineral Identification and Exploration
Abbreviated Course Title	Mineral ID and Explor
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 03/06/26 1:31 pm
Kwame Awuah-Offei (kabp3): Approved for RMINENG Chair
2. 03/10/26 8:01 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/14/26 10:04 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson (hjh9x): Approved

for Pending CCC
Agenda post

History

1. Apr 25, 2014 by
Lahne Black (lahne)
2. Jun 26, 2017 by Tina
Alobaidan (cifarellit)
3. Mar 5, 2018 by Tina
Alobaidan (cifarellit)
4. Oct 5, 2023 by
Jennifer Pohlsander
(jpnfd)
5. Jan 29, 2024 by
Stephen Casey
(caseysc)

Characterization of mineral deposits. Ore body definition. Mineral Exploration techniques.
Sample methods, errors and mitigation. Rock Identification and application of Geological
Sciences. Hands-on lab to understand geologic concepts.

Prerequisite(s):

Either both Chem 1305 or Chem 1310, ~~1310~~ and Chem 1319 or Chem ~~or Chem~~ 1351.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	2
Laboratory	1

Total: 3

Required for Majors Yes

Elective for Majors No

Communication No

Intensive

Communication No
Emphasized

Grading Basis Graded

Repeatable No

Justification

Changed Min Eng BS degree to require Chem 1305, so need to add option of Chem 1305 to the prerequisites of this course.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 1:35 pm): Selected no for CI and CE.

Crystal Wilson (wilsoncry) (03/10/26 8:01 am): Placed Chem 1305 in numerical order.

Key: 41

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/02/26 2:02 pm

Viewing: **MS&E 5330 : Composite Materials**

Science and Engineering

Last edit: 03/06/26 2:36 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

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

Requested Effective Date Fall 2026

Department Materials Science & Engineering (RMATSENG)

Discipline Materials Science & Engineering (MS&E)

Course Number 5330

Title
Composite Materials Science and Engineering

Abbreviated Course Title Composite MSE

Title

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/02/26 2:54 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/20/26 7:58 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/20/26 12:06 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:56 pm

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Introduces fundamental principles governing the processing, structure, and properties of composites. Examines how constituent selection, interfaces, and architecture determine performance across diverse domains. Highlights how constituent interactions yield tailored property combinations for technological applications.

Prerequisite(s):

A grade of "C" or better in Civ Eng 2210 or graduate standing.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

Replaces CER ENG 4230 : Introduction to Composite Materials and CER ENG 6230 : Composite Materials as a 5000-level course for undergraduate accessibility as part of Materials for Extreme Environments emphasis area. Redesignation in MSE (from Cer Eng) and revised description reflects breadth of materials classes and properties to be considered.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 2:36 pm): Added graded to grading basis.

Key: 10376

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/16/26 1:54 pm

Viewing: **NUC ENG 4203 : Nuclear Reactor**

Engineering **Physics I**

Last edit: 03/16/26 3:18 pm

Changes proposed by: Joshua Schlegel (schlegelj)

Programs
referencing this
course

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

Other Courses
referencing this
course

In The Catalog Prerequisites:

[NUC ENG 4211 : Reactor Physics II](#)

[NUC ENG 4345 : Nuclear Engineering Mathematical Methods](#)

[NUC ENG 4496 : Nuclear System Design I](#)

[NUC ENG 5345 : Nuclear Engineering Mathematical Methods](#)

[NUC ENG 6205 : Linear Transport Theory](#)

[NUC ENG 6223 : Nuclear Reactor Safety](#)

[NUC ENG 6331 : Radiation Shielding](#)

Requested Effective Date Fall 2026

Department Nuclear Eng & Radiation Sci (RNUCLENG)

Discipline Nuclear Engineering (NUC ENG)

Course Number 4203

Title
[Nuclear Reactor Engineering **Physics I**](#)

Abbreviated Course [Nucl Reactor Eng **Physics I**](#)

In Workflow

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

Approval Path

1. 03/16/26 2:17 pm
Joseph Newkirk (jnewkirk):
Approved for NUC ENG Chair
2. 03/20/26 10:31 am
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/20/26 12:06 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson (hjh9x): Approved

Title

for Pending CCC

Co-Listed Course

Agenda post

Catalog Description

Study of neutron interactions, fission, chain reactions, neutron diffusion and neutron slowing down; criticality of a bare thermal homogeneous reactor.

Prerequisite(s):

Nuc Eng 3205.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors Yes ~~No~~

Elective for Majors No

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

To more closely align with UM System.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR

Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/16/26 3:06 pm): Selected no for CI and CE.

Hannah Johnson (hjh9x) (03/16/26 3:18 pm): Selected yes for required for majors and no for elective for majors per email from Johsua Schlegel.

Key: 9131

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/12/26 2:51 pm

Viewing: **PET ENG 3320 : Rock and Fluid**

Properties Petrophysics

Last approved: 06/28/25 6:04 am

Last edit: 03/12/26 2:51 pm

Changes proposed by: Mingzhen Wei (weim)

Programs

referencing this
course

[PE ENG-BS: Petroleum Engineering BS](#)

Other Courses

referencing this
course

In The Catalog Prerequisites:

[PET ENG 3330 : Formation Evaluation](#)

[PET ENG 3520 : Petroleum Reservoir Engineering](#)

Requested Effective Date Fall 2026

Date

Department Earth Sciences and Engineering (RGEOENG)

Discipline Petroleum Engineering (PET ENG)

Course Number 3320

Title

[Rock and Fluid Properties](#) Petrophysics

Abbreviated Course Title [Rock and Fluid Properties](#) Petrophysics

Title

Co-Listed Course

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. CAT entry
11. Peoplesoft

Approval Path

1. 03/02/26 2:20 pm
Stephen Gao (sgao):
Approved for
RGEOENG Chair
2. 03/05/26 8:21 am
Hannah Johnson
(hjh9x): Rollback to
Initiator
3. 03/06/26 8:33 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair
4. 03/11/26 2:42 pm
Crystal Wilson
(wilsoncry):
Rollback to Initiator
5. 03/12/26 3:00 pm

Catalog Description

Stephen Gao (sgao):
Approved for
RGEOSNG Chair
6. 03/16/26 2:33 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
7. 03/17/26 10:27 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
8. 03/30/26 3:57 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Oct 16, 2017 by
Ralph Flori (reflori)
2. Jun 20, 2019 by
Ralph Flori (reflori)
3. Oct 28, 2019 by
Ralph Flori (reflori)
4. Mar 1, 2025 by
Mingzhen Wei
(weim)
5. Jun 28, 2025 by
Jade McCain
(jm558v)

Properties of petroleum reservoir rocks, including lithology, porosity, absolute permeability, pore surface area, relative and effective permeability, fluid saturations, rock wettability, capillary characteristics, acoustic properties, and electrical properties. Darcy's law for single phase linear horizontal, tilted and radial flow. [Properties of petroleum fluids.](#)

Prerequisite(s):

Preceded or accompanied by Physics 1135.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	2
Laboratory	1

Total: 3

Required for Majors Yes

Elective for Majors No

Communication Intensive No

Communication Emphasized No

Grading Basis Graded

Repeatable No

Justification

This change combines original PE3320 Petrophysics and PE2510 Petroleum Fluids Properties. Two objectives: 1) to reduce the overlap between these two courses, and 2) to reduce the total credit hours for the degree curriculum.

Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/05/26 8:21 am): Rollback: Rolling back because PET ENG 3330

and 3520 need to be submitted removing PET ENG 3320.

Crystal Wilson (wilsoncry) (03/11/26 2:42 pm): Rollback: Change in credit hours is an affecting change. The deadline for affecting changes for fall 2026 was October 17, 2025.

Key: 4189

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/06/26 8:42 am

Viewing: **PET ENG 3330 : Formation Evaluation**

Formerly known as: **PET ENG 3310**

Last approved: 05/04/22 6:01 am

Last edit: 03/11/26 12:10 pm

Changes proposed by: Mingzhen Wei (weim)

Programs

referencing this
course

PET ENG 3330:

[PE ENG-BS: Petroleum Engineering BS](#)

[GE ENG-BS: Geological Engineering BS](#)

[GL&GPH-BS: Geology and Geophysics BS](#)

[GEOL-MI: Geology Minor](#)

Other Courses

referencing this
course

In The Catalog Prerequisites:

PET ENG 3310:

[PET ENG 6441 : Advanced Well Stimulation](#)

PET ENG 3330:

[PET ENG 4311 : Reservoir Characterization](#)

[PET ENG 4441 : Well Stimulation](#)

[PET ENG 4720 : Reservoir Geomechanics](#)

Requested Effective Date	Fall 2026
Department	Earth Sciences and Engineering (RGEOENG)
Discipline	Petroleum Engineering (PET ENG)
Course Number	3330

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. CAT entry
11. Peoplesoft

Approval Path

1. 03/05/26 8:43 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair
2. 03/06/26 8:38 am
Crystal Wilson
(wilsoncry):
Rollback to Initiator
3. 03/06/26 9:29 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair
4. 03/11/26 12:11 pm
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary

Title
Formation Evaluation
Abbreviated Course Formation Evaluation
Title
Co-Listed Course

5. 03/16/26 11:12 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
6. 03/30/26 3:57 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Catalog Description

History

1. Jun 22, 2015 by
Ralph Flori (reflori)
2. Jun 20, 2019 by
Ralph Flori (reflori)
3. May 4, 2022 by
Mingzhen Wei
(weim)

An introduction to the electrical, nuclear, and acoustic properties of rocks: theory and interpretation of well logs.

Prerequisite(s):

Physics 2135 or Physics 2111 and 2114; Pet Eng 3320.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	2
Laboratory	1

Total: 3

Required for Majors Yes

Elective for Majors	No
Communication Intensive	<u>No</u>
Communication Emphasized	<u>No</u>
Grading Basis	Graded
Repeatable	No

Justification

Current PE3320 as the pre-requisite of this course is to be combined with current PE2510 into PE3320.

Therefore, the pre-requisite of this course changes to PE3320, which includes original PE3320 information.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer
Comments

Crystal Wilson (wilsoncry) (03/06/26 8:38 am): Rollback: Roll back per department request.

Hannah Johnson (hjh9x) (03/06/26 1:22 pm): Selected no for CI and CE. Added a period at the end of the prereq.

Crystal Wilson (wilsoncry) (03/11/26 12:10 pm): Included the word Physics before 2111.

Course Change Request

Date Submitted: 03/06/26 8:46 am

Viewing: **PET ENG 3520 : Petroleum Reservoir Engineering**

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

Last edit: 03/06/26 8:46 am

Changes proposed by: Mingzhen Wei (weim)

Programs

referencing this
course

[PE ENG-BS: Petroleum Engineering BS](#)

[PE ENG-MI: Petroleum Engineering Minor](#)

[GE ENG-BS: Geological Engineering BS](#)

Other Courses

referencing this
course

In The Catalog Prerequisites:

[PET ENG 3529 : Petroleum Reservoir Laboratory](#)

[PET ENG 4097 : Capstone Design](#)

[PET ENG 4311 : Reservoir Characterization](#)

[PET ENG 4410 : Production Engineering](#)

[PET ENG 4441 : Well Stimulation](#)

[PET ENG 4511 : Applied Petroleum Reservoir Engineering](#)

[PET ENG 4520 : Well Test Analysis](#)

[PET ENG 4590 : Subsurface Energy Economics](#)

[PET ENG 4611 : Secondary Recovery Of Petroleum](#)

[PET ENG 4621 : Fundamentals Of Petroleum Reservoir Simulation](#)

[PET ENG 4631 : Applied Reservoir Simulation](#)

[PET ENG 4710 : Finite Element Analysis with Applications in Petroleum Engineering](#)

[PET ENG 4811 : Offshore Petroleum Technology](#)

[PET ENG 6441 : Advanced Well Stimulation](#)

[PET ENG 6521 : Advanced Well Test Analysis](#)

In Workflow

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

Approval Path

1. 03/05/26 8:44 am
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
2. 03/05/26 4:24 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
3. 03/06/26 8:39 am
Crystal Wilson
(wilsoncry):
Rollback to Initiator
4. 03/06/26 9:29 am
Stephen Gao (sgao):
Approved for
RGEOSENG Chair
5. 03/12/26 1:36 pm

PET ENG 6551 : Advanced Reservoir Engineering II

Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
6. 03/16/26 11:12 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
7. 03/30/26 3:57 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Requested Effective Date Fall 2026
Department Earth Sciences and Engineering (RGEOSENG)
Discipline Petroleum Engineering (PET ENG)
Course Number 3520
Title
 Petroleum Reservoir Engineering
Abbreviated Course Title Petr Reservoir Engr
Co-Listed Course

History

1. Jun 20, 2019 by
 Ralph Flori (reflori)

Catalog Description

Properties of reservoir formations and fluids; reservoir volumetrics, reservoir statics, reservoir dynamics. Darcy's law and the mechanics of single and multiphase fluid flow through reservoir rock, capillary phenomena, material balance, reservoir drive mechanisms.

Prerequisite(s):

Accompanied or preceded by Pet Eng ~~2510~~, ~~Pet Eng~~ 3320.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors Yes

Elective for Majors No

Communication Intensive	<u>No</u>
Communication Emphasized	<u>No</u>
Grading Basis	Graded
Repeatable	No

Justification

The pre-requisite course PE3320 is to be combined with PE2510 into a modified PE3320.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer
Comments

Hannah Johnson (hjh9x) (03/05/26 4:24 pm): Selected no for CI and CE. Changed effective date to Fall 2026.

Crystal Wilson (wilsoncry) (03/06/26 8:39 am): Rollback: Roll back per department request.

Key: 2614

[Preview Bridge](#)

Course Change Request

Date Submitted: 03/12/26 2:53 pm

Viewing: **PET ENG 4531 : Natural Gas Engineering**

Last approved: 05/09/22 6:01 am

Last edit: 03/16/26 2:34 pm

Changes proposed by: Mingzhen Wei (weim)

Programs
referencing this
course

[PE ENG-BS: Petroleum Engineering BS](#)

[E ECON-CTU: Energy Economics - CTU](#)

Requested Effective Date Fall 2026

Department Earth Sciences and Engineering (RGEOENG)

Discipline Petroleum Engineering (PET ENG)

Course Number 4531

Title
 Natural Gas Engineering

Abbreviated Course Title Natural Gas Engineering

Co-Listed Course

Catalog Description

In Workflow

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

Approval Path

1. 03/06/26 8:35 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair
2. 03/06/26 8:39 am
Crystal Wilson
(wilsoncry):
Rollback to Initiator
3. 03/06/26 9:29 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair
4. 03/12/26 1:38 pm
Crystal Wilson
(wilsoncry):
Rollback to Initiator
5. 03/12/26 3:00 pm

- Stephen Gao (sgao):
 Approved for
 RGEOSNG Chair
6. 03/16/26 2:35 pm
 Hannah Johnson
 (hjh9x): Approved
 for CCC Secretary
7. 03/17/26 10:27 am
 Theresa Swift
 (thswift): Approved
 for Engineering
 DSCC Chair
8. 03/30/26 3:57 pm
 Hannah Johnson
 (hjh9x): Approved
 for Pending CCC
 Agenda post

History

1. May 9, 2022 by
 Mingzhen Wei
 (weim)

This course will cover basic and fundamental knowledge for a future natural gas engineer, including natural gas properties, natural gas underground storage estimates, natural gas exploration/drilling/and completion, natural gas productivity and deliverability estimates, natural gas related processing after it reaches the surface.

Prerequisite(s):

Pet Eng 2510 or Pet Eng 3320. ~~2510.~~

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors Yes

Elective for Majors No

Communication No
Intensive

Communication No
Emphasized

Grading Basis Graded

Repeatable No

Justification

this change will cover the confusion caused by curriculum change.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (03/06/26 8:39 am): Rollback: Roll back per department request.

Hannah Johnson (hjh9x) (03/06/26 1:24 pm): Selected no for CI and CE.

Crystal Wilson (wilsoncry) (03/12/26 1:38 pm): Rollback: Rollback: Changing the pre-req course is an affecting change. The deadline for affecting changes for fall 2026 was October 17, 2025.

Hannah Johnson (hjh9x) (03/16/26 2:34 pm): Changed prereq to say Pet Eng 2510 before Pet Eng 3320.

Course Change Request

Date Submitted: 03/05/26 9:24 am

Viewing: **PET ENG 4590 : Subsurface Energy**

Economics

Last approved: 02/21/22 6:01 am

Last edit: 03/05/26 4:25 pm

Changes proposed by: Mingzhen Wei (weim)

Programs
referencing this
course

[PE ENG-BS: Petroleum Engineering BS](#)

[GE ENG-BS: Geological Engineering BS](#)

[PET SYS-CT: Petroleum Systems CT](#)

[CM ENG-CT: Carbon Management Engineering CT](#)

[E ECON-CTU: Energy Economics - CTU](#)

Requested Effective Date	Fall 2026
Department	Earth Sciences and Engineering (RGEOENG)
Discipline	Petroleum Engineering (PET ENG)
Course Number	4590
Title	Subsurface Energy Economics
Abbreviated Course Title	Sub. Energy Economics
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 03/05/26 9:39 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair
2. 03/05/26 4:26 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
3. 03/10/26 12:50 pm
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC

History

1. Feb 21, 2022 by Mingzhen Wei (weim)

Uncertainty in the estimation of oil and gas reserves; tangible and intangible investment costs; depreciation; evaluation of producing properties; federal income tax considerations; chance factor and risk determination. Petroleum economic evaluation software is introduced. Students are expected to have fundamental engineering skills on MS Excel.

Prerequisite(s):

Pet Eng 3520. ~~Pet Eng 3520, Econ 1100, or Econ 1200.~~

Corequisite(s):

Credit Hours

Credit Hours

	Credit Type	Credit Hours
Lecture		3

Total: 3

Required for Majors Yes

Elective for Majors No

Communication No
Intensive

Communication No
Emphasized

Grading Basis Graded

Repeatable No

Justification

Added MS Excel skill as expectation from students in the description to ensure the awareness of this essential engineering tool.

removed the pre-requisites for Econ1100/1200 because they are now as General Educational Credits and the students are not required to take them anymore. Plus, PE4590 aims at financial calculations and economic decision making that are very specific for the energy sector, therefore those big-pictured education in micro/macro economics class is not necessarily required for the success of this course.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Hannah Johnson (hjh9x) (03/05/26 4:25 pm): Added a period after the prereq. Selected no for CI and CE.

Key: 1233

[Preview Bridge](#)

Program Change Request

Date Submitted: 03/10/26 12:09 pm

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

Last approved: 09/20/24 2:58 pm

Last edit: 03/16/26 11:08 am

Changes proposed by: Cecil Eng Huang Chua (cecq8z)

Catalog Pages Using
this Program

[Information Science and Technology](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Certificate
Academic Level	Graduate
Program Code	AI-CT
Department	Jaggi School of Business
Discipline	Info Science & Technology
Title	

In Workflow

1. [RINFSCTE Chair](#)
2. [CCC Secretary](#)
3. [Social Sciences DSCC Chair](#)
4. [Pending CCC Agenda post](#)
5. [CCC Meeting Agenda](#)
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar

Approval Path

1. 03/10/26 12:33 pm
Cassie Elrod (cassa):
Approved for
RINFSCTE Chair
2. 03/16/26 11:09 am
Hannah Johnson (hjh9x): Approved
for CCC Secretary
3. 03/16/26 11:32 am
Cecil Eng Huang Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/30/26 3:55 pm
Hannah Johnson (hjh9x): Approved
for Pending CCC
Agenda post

History

1. Jun 12, 2019 by ershenb
2. Jul 1, 2020 by Cecil Eng Huang Chua (cchua)
3. Feb 3, 2021 by Cecil Eng Huang Chua (cchua)
4. Apr 30, 2024 by Cecil Eng Huang Chua (cchua)
5. Sep 20, 2024 by Cecil Eng Huang Chua (cchua)

AI, Mach Lrn & Auto for Bus CT

CIP Code

Intended Audience

[Distance \(online\) Students](#)

[Main Campus Students](#)

Program Requirements and Description

AI, Machine Learning and Automation in Business

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

Required Core Courses:

[BUS 5730](#)

Machine Learning and Artificial Intelligence for Business

<u>IS&T 5520</u>	Data Science and Machine Learning with Python
Elective courses (choose two):	
<u>BUS 5920</u>	<u>Artificial Intelligence: Law, Governance, and Policy</u>
<u>ERP 6220</u>	Data Modeling & Visualization Prototyping for Enterprise Decision Dashboard
<u>IS&T 5420</u>	Business Analytics and Data Science
<u>IS&T 5535</u>	Machine Learning Algorithms and Applications
<u>IS&T 6443</u>	Information Retrieval and Analysis
<u>IS&T 6723</u>	Artificial Intelligence, Robotics, and Digital Transformation

Justification for request

The department recently had a relevant course (BUS 5920) approved, and wishes to add this relevant course to the certificate.

Attach Budget

System Approval Letter [AI Machine Learning and Automation for Business-approvals.pdf](#)

MDHE Approval

Supporting Documents [aiapprove.pdf](#)

Reviewer

Comments

Hannah Johnson (hjh9x) (03/16/26 11:04 am): Course BUS 5920 is listed on the supporting documents as IS&T 5920 per Cassie Elrod. As the IS&T 5920 does not exist.

Hannah Johnson (hjh9x) (03/16/26 11:08 am): Alphabetized the elective section.

Program Change Request

Date Submitted: 03/04/26 10:00 am

Viewing: **ANA&DTA-MI : Business Analytics and Data Science Minor**

Last approved: 07/01/25 11:06 am

Last edit: 03/11/26 4:22 pm

Changes proposed by: Cecil Eng Huang Chua (cecq8z)

Catalog Pages Using
this Program

[Business and Management Systems](#)
[Information Science and Technology](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Minor
Academic Level	Undergraduate
Program Code	ANA&DTA-MI
Department	Jaggi School of Business
Discipline	Info Science & Technology
Title	

In Workflow

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

Approval Path

1. 03/10/26 10:13 am
Cassie Elrod (cassa):
Approved for
RINFSCTE Chair
2. 03/11/26 4:22 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
3. 03/11/26 5:32 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Mar 17, 2015 by barryf
2. Jul 28, 2015 by kleb6b
3. Jul 29, 2015 by pantaleoa
4. Jul 29, 2015 by pantaleoa
5. Feb 1, 2016 by barryf
6. Sep 19, 2017 by barryf
7. Feb 3, 2021 by Cecil Eng Huang Chua (cchua)
8. Jul 1, 2025 by Cecil Eng Huang Chua (cchua)

Business Analytics and Data Science Minor

CIP Code

Program Requirements and Description

Minor in Business Analytics and Data Science

The minor in business analytics and data science requires the following 15 hours of coursework:

<u>IS&T 1750</u>	Introduction to Management Information Systems	3
<u>IS&T 3420</u>	Introduction to Data Science and Management	3
<u>IS&T 3423</u>	Database Management	3
Two courses from the following list:		6
<u>BUS 5730</u>	Machine Learning and Artificial Intelligence for Business	
<u>IS&T 5420</u>	Business Analytics and Data Science	
<u>IS&T 5450</u>	Introduction to Information Visualization	
<u>IS&T 5520</u>	Data Science and Machine Learning with Python	

Justification for
request

New course was added relevant to minor

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Hannah Johnson (hjh9x) (03/11/26 4:22 pm): Alphabetized list of courses.

Program Change Request

Date Submitted: 03/06/26 1:15 pm

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

Last approved: 12/24/25 9:34 am

Last edit: 03/06/26 1:15 pm

Changes proposed by: Thomas Schuman (tschuman)

Catalog Pages Using
this Program
[Chemistry](#)

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

Approval Path

1. 02/23/26 5:53 pm
Chariklia Sotiriou-
Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 02/24/26 9:20 am
Hannah Johnson
(hjh9x): Rollback to
Initiator
3. 03/06/26 1:57 pm
Chariklia Sotiriou-
Leventis (cslevent):
Approved for
RCHEMIST Chair
4. 03/06/26 2:05 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
5. 03/19/26 11:19 am
Katie Shannon
(shannonk):

Approved for
Sciences DSCC Chair
6. 03/30/26 3:55 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Apr 28, 2014 by
Thomas Schuman
(tschuman)
2. Jun 19, 2015 by
Klaus 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)
8. Jun 14, 2022 by
Thomas Schuman
(tschuman)
9. Apr 1, 2024 by
Thomas Schuman
(tschuman)
10. Apr 15, 2024 by Evie
Sherlock (esdk3)
11. Jun 14, 2024 by
Jennifer Pohlsander

Rationale for
Inactivation

(jpnfd)

12. Jul 1, 2025 by
Thomas Schuman
(tschuman)

13. Dec 24, 2025 by
Crystal Wilson
(wilsoncry)

Supporting
Documents

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
CIM Prospectus	
Academic Level	Undergraduate
Program Code	CHEM-BS
Department	Chemistry
Discipline	Chemistry
Offered by	
Title	Chemistry BS
CIP Code	

Purpose

Intended Audience

Program-Specific
Admission

Program Requirements and Description

Bachelor of Science Chemistry

A minimum of 120 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.

General Education Electives must fulfill the Missouri S&T general education requirements applicable to the student's catalog year. The Chemistry science curriculum requires twelve (12) semester hours in humanities and must include [ENGLISH 1120](#) and [ENGLISH 1160](#) or [ENGLISH 3560](#) . A minimum of nine (9) 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 1100	1	CHEM 1320	3
CHEM 1110	1	CHEM 1510	2
CHEM 1310	4	COMP SCI 1973	<u>2</u>
CHEM 1319	1	COMP SCI 1983	<u>1</u>
MATH 1214 or 1210 <i>and</i> 1211	4	ENGLISH 1160	3
ENGLISH 1120	3	MATH 1215	4
		COMP SCI 1500	3
	14		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 2410	3
PHYSICS 1135	4	CHEM 2510	4
Humanities Elective ¹	3	PHYSICS 2135	4
	15		15

Junior Year

First Semester	Credits	Second Semester	Credits
CHEM 2420	3	CHEM 2459	2

CHEM 3310	3	CHEM 3320	3
CHEM 3510	4	CHEM 3329	1
STAT 3113	3	CHEM 4010 or 4099	1
Humanities Elective ¹	3	CHEM 4099	1
		Social Science Elective ¹	3
		General elective	3
	16		14
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 4099	1	CHEM 4297	3
CHEM 4610	3	Social Science Elective ¹	3
CHEM 4810	3	General electives	9
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3		
General electives	6		
	16		15
Total Credits: 120			
1			

Gen. Ed. Elective must fulfill the Missouri S&T general education requirements applicable to the students catalog year.

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: The degree has eighteen (18) hours of general electives credit that may not include Math courses prerequisite to calculus. Not more than one (1) credit hour of [CHEM 4010](#) can be included for degree credit. Up to eight (8) credit hours may be taken of [CHEM 4099](#).

Chemistry

Biochemistry Emphasis Area

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1100	1	BIO SCI 2213	3
CHEM 1110	1	BIO SCI 2219	1
CHEM 1310	4	CHEM 1320	3
CHEM 1319	1	CHEM 1510	2
ENGLISH 1120	3	COMP SCI 1973	<u>2</u>
MATH 1214 or 1210 <i>and</i> 1211	4	COMP SCI 1983	<u>1</u>
		ENGLISH 1160	3
		MATH 1215	4

	14		15
Sophomore Year			
First Semester	Credits	Second Semester	Credits
<u>BIO SCI 2213</u>	<u>3</u>	<u>CHEM 2220</u>	3
<u>BIO SCI 2219</u>	<u>1</u>	<u>CHEM 2229</u>	1
<u>CHEM 2210</u>	3	<u>CHEM 2410</u>	3
<u>CHEM 2219</u>	1	<u>CHEM 2510</u>	4
COMP SCI 1500	3	<u>PHYSICS 2135</u>	4
<u>MATH 2222</u>	4		
<u>PHYSICS 1135</u>	4		
	16		15
Junior Year			
First Semester	Credits	Second Semester	Credits
<u>CHEM 2420</u>	3	<u>CHEM 3329</u>	1
<u>CHEM 3310</u>	3	<u>CHEM 3320</u>	3
<u>CHEM 4610</u>	3	<u>CHEM 2459</u>	2
<u>CHEM 4619</u>	2	<u>CHEM 4620</u>	3
<u>CHEM 4099</u>	<u>1</u>	<u>CHEM 4099</u>	1
<u>STAT 3113</u>	3	<u>CHEM 4010</u> or <u>4099</u>	1
		Humanities Elective ¹	3
	15		14
Senior Year			
First Semester	Credits	Second Semester	Credits
<u>CHEM 3510</u>	4	<u>CHEM 4297</u>	3
CHEM 4099	1	Social Science Electives ¹	6
<u>CHEM 4810</u>	3	General electives	6
<u>CHEM 4630</u>	3		
<u>HISTORY 1200</u> , or <u>1300</u> , or <u>1310</u> , or <u>POL SCI 1200</u>	3		
Humanities Elective ¹	3		
	16		15
Total Credits: 120			

1

Gen. Ed. Elective must fulfill the Missouri S&T general education requirements applicable to the students catalog year.

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: The degree has six (6) credit hours of general electives credit that may not include Math courses prerequisite to calculus. Three (3) hours upper technical elective credit must be 2xxx, 3xxx, 4xxx (or 5xxx or higher

with permission) level in chemistry or can be taken in another technical area with permission of department. Not more than 1 credit hour of [CHEM 4010](#) can be included for degree credit. Up to eight (8) credit hours may be taken of [CHEM 4099](#).

Polymer & Coatings Science Emphasis Area

Freshman Year

First Semester	Credits	Second Semester	Credits
CHEM 1100	1	CHEM 1320	3
CHEM 1110	1	CHEM 1510	2
CHEM 1310	4	COMP SCI 1500	3
CHEM 1319	1	COMP SCI 1973	<u>2</u>
MATH 1214 or 1210 <i>and</i> 1211	4	COMP SCI 1983	<u>1</u>
ENGLISH 1120	3	ENGLISH 1160	3
		MATH 1215	4
	14		15

Sophomore Year

First Semester	Credits	Second Semester	Credits
CHEM 2210	3	CHEM 2220	3
CHEM 2219	1	CHEM 2229	1
CHEM 4810	3	CHEM 2410	3
MATH 2222	4	CHEM 2510	4
PHYSICS 1135	4	PHYSICS 2135	4
	15		15

Junior Year

First Semester	Credits	Second Semester	Credits
CHEM 2420	3	CHEM 2459	2
CHEM 3310	3	CHEM 3320	3
CHEM 3510	4	CHEM 4850	3
PHYSICS 4523	3	CHEM 3329	1
STAT 3113	3	CHEM 4099	2
		Humanities Elective ¹	3
		Social Science Elective ¹	3
	16		17

Senior Year

First Semester	Credits	Second Semester	Credits
CHEM 4010	1	CHEM 4297	3
CHEM 4099	1	Social Science Elective ¹	3
CHEM 4610	3	General Electives	6
CHEM 4819	1		

HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3	
Humanities Elective ¹	3	
General Electives	4	
	16	12

Total Credits: 120

1

Gen. Ed. Elective must fulfill the Missouri S&T general education requirements applicable to the students catalog year.

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: The degree has ten (10) credit hours of general electives credit that may not include Math courses prerequisite to calculus. Not more than 1 credit hour of [CHEM 4010](#) can be included for degree credit. Up to eight (8) credit hours may be taken of [CHEM 4099](#).

Pre-medicine Emphasis Area

Freshman Year

First Semester	Credits	Second Semester	Credits
CHEM 1100	1	BIO SCI 1113	3
CHEM 1110	1	CHEM 1320	3
CHEM 1310	4	CHEM 1510	2
CHEM 1319	1	ENGLISH 1160 or 3560	3
MATH 1214 or 1210 <i>and</i> 1211	4	MATH 1215	4
ENGLISH 1120	3		
	14		15

Sophomore Year

First Semester	Credits	Second Semester	Credits
BIO SCI 2213	3	BIO SCI 2223	3
BIO SCI 2219	1	CHEM 2220	3
CHEM 2210	3	CHEM 2229	1
CHEM 2219	1	CHEM 2510	4
COMP SCI 1500	3	PHYSICS 2145	4
COMP SCI 1973	<u>2</u>		
COMP SCI 1983	<u>1</u>		
PHYSICS 1145	4		
	15		15

Junior Year			
First Semester	Credits	Second Semester	Credits
<u>BIO SCI 3333</u>	3	<u>BIO SCI 3343</u>	3
<u>BIO SCI 3359</u>	1	<u>CHEM 2410</u>	3
<u>CHEM 3310</u>	3	<u>CHEM 3329</u>	1
<u>CHEM 4610</u>	3	<u>CHEM 4010</u> or <u>4099</u>	1
<u>CHEM 4619</u>	2	<u>CHEM 4620</u>	3
<u>STAT 3425</u>	4	<u>PSYCH 1101</u>	3
	16		14
Senior Year			
First Semester	Credits	Second Semester	Credits
<u>CHEM 3510</u>	4	<u>BIO SCI 3313</u>	3
<u>CHEM 4630</u>	3	<u>CHEM 4297</u>	3
<u>CHEM 4650</u>	3	Humanities Elective ¹	3
<u>HISTORY 1200</u> , or <u>1300</u> , or <u>1310</u> , or <u>POL SCI 1200</u>	3	Social Science Elective ¹	3
Humanities Elective ¹	3	General Elective	3
	16		15

Total Credits: 120

1

Gen. Ed. Elective must fulfill the Missouri S&T general education requirements applicable to the students catalog year.

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: The degree has three (3) credit hours of general electives credit that may not include Math courses prerequisite to calculus. Not more than 1 credit hour of [CHEM 4010](#) can be included for degree credit. Up to eight (8) credit hours may be taken of [CHEM 4099](#).

Justification for request

Change in computer science requirements at request of Dean of Undergrads office and by Computer Science department. Biology department changed their prereq for the cell biology course so we are moving the cell biology and lab to a later semester.

Attach Budget

System Approval Letter

MDHE Approval

Supporting
Documents

Reviewer
Comments

Hannah Johnson (hjh9x) (02/24/26 9:20 am): Rollback: Rolling back because the two courses that were added in the BS and in all three emphasis areas, have not been submitted as CC forms. Also, CHEM 1320 is a prerequisite for BIO SCI 2213 and needs to be placed before BIO SCI 2213.

Program Change Request

Date Submitted: 03/06/26 11:37 am

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

Last approved: 07/01/25 11:07 am

Last edit: 03/11/26 3:22 pm

Changes proposed by: Venkata Sriram Siddhardh Nadendla (nadendla)

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

Final Catalog FS2026-SP2027
Rationale for
.....
Supporting
.....

Effective Catalog FS2026-SP2027
Edition
Start Term Fall 2026
Program Type Bachelor of Science
CIM Prospectus
Academic Level Undergraduate
Program Code CMP SC-BS
Department Computer Science
Discipline Computer Science
Offered by
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

Approval Path

1. 10/09/25 3:37 pm
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
2. 10/13/25 10:34 am
Jade McCain (jm558v): Approved for CCC Secretary
3. 10/15/25 10:19 am
Crystal Wilson (wilsoncry): Rollback to Initiator
4. 03/06/26 11:39 am
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
5. 03/11/26 3:47 pm
Hannah Johnson (hjh9x): Approved for CCC Secretary

6. 03/16/26 11:10 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
7. 03/30/26 3:55 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Aug 5, 2014 by
tauritzd
2. Aug 13, 2014 by
pantaleoa
3. Jun 19, 2015 by
tauritzd
4. Jul 15, 2015 by
pantaleoa
5. Jun 28, 2017 by
tauritzd
6. Jun 14, 2019 by
tauritzd
7. Mar 3, 2020 by
ershenb
8. Oct 28, 2020 by
Marita Raper
(tibbettsmg)
9. Oct 1, 2021 by
Crystal Wilson
(wilsoncry)
10. Jun 14, 2022 by
Peizhen Zhu (zhupe)
11. Apr 17, 2023 by
Jennifer Pohlsander
(jpnfd)
12. Mar 27, 2024 by
Evie Sherlock
(esdk3)

- 13. Mar 17, 2025 by Venkata Sriram Siddhardh Nadendla (nadendla)
- 14. Jul 1, 2025 by Venkata Sriram Siddhardh Nadendla (nadendla)

Computer Science BS

CIP Code

Purpose

Intended Audience

Program-Specific

Admission

Program Requirements and Description

Bachelor of Science Computer Science

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

Sample Course of Study

Freshman Year

First Semester	Credits	Second Semester	Credits
FR ENG 1100	1	COMP SCI 1200	3
COMP SCI 1010	1	COMP SCI 1570	3
COMP SCI 1500 ¹	3	COMP SCI 1580	1
Laboratory Science Elective ²	5	MATH 1215	4
MATH 1214 or 1211	4	ENGLISH 1160 or 3560	3
ENGLISH 1120	3	HISTORY 1300 , or 1310 , or 1200 , or POL SCI 1200	3
	17		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
COMP SCI 1575	3	COMP SCI 2300	3
COMP SCI 1585	1	COMP SCI 2500	3
COMP ENG 2210 ⁵	3	COMP SCI 2580	1
MATH 3108	3	Statistics Elective ⁶	3
Natural Sciences Elective ³	3	Sci/Eng Elective ⁷	3
Gen. Ed. Elective ³	3	PHILOS 3225 , or 3235 , or 4340 , or 4368 (Ethics Elective) ⁴	3
	16		16

Junior Year

First Semester	Credits	Second Semester	Credits
COMP SCI 3100	3	COMP SCI 2200	3
COMP SCI 3800	3	COMP SCI 3610	3
COMP ENG 3150	3	Comp Sci Elective ^{8,9}	3
COMP SCI 3803	3	Sci/Eng Elective ⁷	3
Comp Sci Elective ^{8,9}	3	SP&M S 1185 ¹⁰	3
Gen. Ed. Elective ³	3		
	15		15

Senior Year

First Semester	Credits	Second Semester	Credits
COMP SCI 3500	3	COMP SCI 4096	3
COMP SCI 4095	1	Comp Sci Elective ^{8,9}	3
COMP SCI 4610	3	Comp Sci Elective ^{8,9}	3
Comp Sci Elective ^{8,9}	3	Gen. Ed. Elective ³	3
Comp Sci Elective ^{8,9}	3	Free Elective ^{9,11}	4
Free Elective ^{9,11}	3		
	16		16

Total Credits: 128

Artificial Intelligence Emphasis Area

Core Requirements:

<u>COMP SCI 3402</u>	<u>Introduction to Data Science</u>	<u>3</u>
<u>COMP SCI 5400</u>	<u>Introduction To Artificial Intelligence</u>	<u>3</u>
<u>COMP SCI 5420</u>	<u>Introduction to Machine Learning</u>	<u>3</u>

Two of the following:

COMP SCI 44XX/54XX¹²

Any COMP SCI 5001 from a preapproved list approved by the department

Cybersecurity Emphasis Area

Core Requirements:

<u>COMP SCI 5602</u>	<u>Introduction to Cryptography</u>	<u>3</u>
<u>COMP SCI 5603</u>	<u>Internet Security</u>	<u>3</u>
<u>COMP SCI 5604</u>	<u>Ethical Hacking</u>	<u>3</u>

One of the following:

<u>COMP SCI 3601</u>	<u>Digital Forensics</u>	<u>3</u>
<u>COMP SCI 4700</u>	<u>Intellectual Property For Computer Scientists</u>	<u>3</u>
<u>COMP SCI 5408</u>	<u>Game Theory for Computing</u>	<u>3</u>
<u>COMP SCI 5601</u>	<u>Security Operations & Program Management</u>	<u>3</u>
<u>COMP SCI 5605</u>	<u>AI Security</u>	<u>3</u>

1

Or [COMP SCI 1971](#) and [COMP SCI 1981](#). May be awarded credit if (i) a score of 4 or 5 on the AP Computer Science A exam, or (ii) a "Distinguished" (490 or above) score on the PLTW Computer Science A End-of-Course exam, along with "A" grade in the PLTW CSA high school course.

2

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

3

General education electives must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

4

General education discipline specific required ethics course.

5

Laboratory not required.

6

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

7

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](#), and [PHYSICS 2119](#). However, at most one of [PHYSICS 1135](#) or [PHYSICS 1145](#), and at most one of [PHYSICS 2135](#) or [PHYSICS 2145](#) are allowed to be counted towards Sci/Eng electives.

8

Eighteen 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.

9

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

10

General education discipline specific required course [SP&M S 1185](#) 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](#), [MIL AIR 4120](#)).

11

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.

12

Any of the Comp Sci 44XX/54XX courses will be counted, excluding the following three courses: [COMP SCI 5405](#), [COMP SCI 5406](#) and [COMP SCI 5407](#).

~~13~~

~~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.~~

Justification for
request

Replacing Comp Eng 3150 with Comp Sci 3803 - voted by department faculty (on 02/25/2026). In addition, two new emphasis areas on artificial intelligence and cybersecurity are proposed in this DC form. CC forms for three new courses (Comp Sci 5603, 5604, 5605) included in the cybersecurity emphasis area are also submitted along with this DC form. Attached with this DC form are the approved PC forms, the cover letter to Dean Borrok, and the approval from the Provost's office -- Sid Nadendla, dated 3/4/2026

Included our policy as voted by the department faculty (on 4/25/2025) for waiving Comp Sci 1500 for all those students who satisfy the necessary PLTW Comp Sci A credentials.

Updated footnote 9 to read any six hours instead of nine hours as there are only six hours of sci/eng elective listed on the plan of study grid.-cw 10/16/2025

Removed math 1208 and math 1221 from footnote 4 and 5 as these courses are not listed in the catalog as they have not been offered since fall 2016. Updated the footnotes to compensate for this change.-cw 10/27/2025

Attach Budget

System Approval
Letter

MDHE Approval

Supporting Documents [CMP SC-BS EmphasisAreas ProvostApproval.pdf](#)
[CoverLetter BSEmphasisAreas CompSci Feb2026.docx](#)
[Approved PC Form - Comp Sci BS - Cybersecurity Emphasis Area.docx](#)
[Approved PC Form - Comp Sci BS - AI Emphasis Area.docx](#)

Reviewer

Comments

Crystal Wilson (wilsoncry) (10/15/25 10:19 am): Rollback: Rollback per department request to update with regards to changes in stat courses.

Crystal Wilson (wilsoncry) (03/11/26 3:22 pm): Removed COMP SCI 5603, 5604, and 5605 and re-added them back because they were originally showing in a red box.

Program Change Request

Date Submitted: 03/03/26 4:06 pm

Viewing: **CP ENG-MI : Computer Engineering**

Minor

Last approved: 07/15/15 11:10 am

Last edit: 03/05/26 11:22 am

Changes proposed by: R.Joe Stanley (stanleyj)

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

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Minor
Academic Level	Undergraduate
Program Code	CP ENG-MI
Department	Electrical & Computer Engr
Discipline	Computer Engineering
Title	

In Workflow

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

Approval Path

1. 03/03/26 8:30 pm
Jonathan Kimball (kimballjw):
Approved for RELECENG Chair
2. 03/05/26 11:23 am
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/10/26 12:50 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post

History

1. Jul 23, 2014 by watkins
2. Aug 13, 2014 by pantaleoa
3. Jun 23, 2015 by pantaleoa
4. Jul 15, 2015 by pantaleoa

Computer Engineering Minor

CIP Code

Program Requirements and Description

Minor Curriculum

A minor in computer engineering will require the following:

~~Pass the ELEC ENG Advancement Exam I (ELEC ENG 2100 final) with a "C" or better *~~

~~Pass the COMP ENG Advancement Exam (COMP ENG 2210 final) with a "C" or better **~~

A "C" or better in the following courses:

[COMP ENG 3110](#) Computer Organization and Design

[COMP ENG 3150](#) Introduction to Microcontrollers and Embedded System Design

[COMP ENG 5410](#) Introduction to Computer Communication Networks

or [COMP SCI 5600](#) Advanced Computer Networks

[ELEC ENG 2100](#) [Circuits I](#)

[ELEC ENG 2120](#) [Circuits II](#)

Pass 3 hours of additional 4XXX-level or above COMP ENG or ELEC ENG or COMP SCI coursework with a "C" or better, excluding senior design, special problems, and undergraduate research. Transfer courses cannot be used to satisfy this requirement. The course choice for this requirement is subject to the approval of the minor advisor.

*

~~One opportunity will be given to pass the EL ENG Advancement Exam I if a student has prior course or experience in circuits. Otherwise, the student must pass ELEC ENG 2100%7CCode.~~

~~One opportunity will be given to pass the COMP ENG Advancement Exam if a student has prior course or experience in digital circuits. Otherwise, the student must pass COMP ENG 2210%7CCode.~~

Justification for
request

In August 2025, the ECE department approved a change to the advancement exam policy for the core sophomore level courses (Elec Eng 2100, Elec Eng 2120, Elec Eng 2200, Comp Eng 2210) to remove the C or better requirement on the advancement exam to pass the respective courses. The footnotes related to passing the advancement exams have been removed from the Comp Eng BS program. The requirements for Comp Eng Minor program are updated to require C or better grades in Elec Eng 2100 and Elec Eng 2120, removing the C or better requirement on the final exams for those courses.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer
Comments

Crystal Wilson (wilsoncry) (03/05/26 11:18 am): Removed footnotes per department request on 3/4/2026.

Hannah Johnson (hjh9x) (03/05/26 11:22 am): Alphabetized the courses in the course list.

Program Change Request

Date Submitted: 03/04/26 4:55 pm

Viewing: **CR ENG-BS : Ceramic Engineering BS**

Last approved: 12/24/25 9:34 am

Last edit: 03/20/26 7:53 am

Changes proposed by: David Lipke (lipked)

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

Final Catalog FS2026-SP2027

Rationale for

.....

Supporting

Documents

Effective Catalog Edition FS2026-SP2027

Start Term Fall 2026

Program Type Bachelor of Science

CIM Prospectus

Academic Level Undergraduate

Program Code CR ENG-BS

Department Materials Science & Engineering

Discipline Ceramic Engineering

Offered by Title

In Workflow

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

Approval Path

1. 03/04/26 4:56 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/20/26 7:57 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/20/26 12:06 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson (hjh9x): Approved for Pending CCC

History

1. Oct 10, 2013 by
Lahne Black (lahne)
2. Apr 22, 2014 by
Lahne Black (lahne)
3. Aug 6, 2014 by F.
Scott Miller (smiller)
4. Jun 19, 2015 by F.
Scott Miller (smiller)
5. Jul 15, 2015 by
pantaleoa
6. Jun 28, 2017 by F.
Scott Miller (smiller)
7. Mar 3, 2020 by
ershenb
8. Apr 6, 2022 by F.
Scott Miller (smiller)
9. Jun 14, 2024 by
David Lipke (lipke)
10. Dec 20, 2024 by
Crystal Wilson
(wilsoncry)
11. Jul 1, 2025 by David
Lipke (lipke)
12. Dec 24, 2025 by
Crystal Wilson
(wilsoncry)

Ceramic Engineering BS

CIP Code [14.0601 - Ceramic Sciences and Engineering.](#)

Purpose

Intended Audience

Program-Specific

Admission

Program Requirements and Description

Bachelor of Science Ceramic Engineering

For the Bachelor of Science degree in Ceramic Engineering a minimum of 128 credit hours is required. A cumulative grade point average of at least 2.0 is required for all courses applied toward the degree, as well as for all required courses in the major field of study.

Freshman Year

First Semester	Credits	Second Semester	Credits
CHEM 1310 ¹	4	CER ENG 2210 ¹	2
CHEM 1319	1	CHEM 1320 ¹	3
ENGLISH 1120	3	MATH 1215 ¹	4
FR ENG 1100	1	MECH ENG 1720	3
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3	PHYSICS 1135 ¹	4
MATH 1214 or 1211 ¹	4	Programming Elective ²	<u>3</u>
	16		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
CER ENG 2010	<u>0.5</u>	CER ENG 2120	3
CER ENG 2110 ¹	3	CER ENG 2325 ¹	2
CER ENG 2315 ¹	2	CIV ENG 2200 ¹	3
CER ENG 3230 ¹	3	MATH 3304 ¹	3
MATH 2222	4	ENGLISH 1160 , or 3560 , or SPM S 1185 ⁵	3
PHYSICS 2135 ¹	4	STAT 3113 or 3117	<u>3</u>
	16.5	General Education Elective ³	3
			17

Junior Year

First Semester	Credits	Second Semester	Credits
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<u>CER ENG 3010</u>	<u>0.5</u>	<u>CER-ENG 3325</u>	<u>2</u>
<u>CER ENG 3210</u>	<u>3</u>	<u>CER ENG 3410</u>	<u>3</u>
<u>CER ENG 3220</u> ¹	3	<u>CER ENG 3425</u>	<u>2</u>
<u>CER ENG 3315</u> ¹	2	<u>CER ENG 4310</u>	3
<u>CIV ENG 2210</u> ¹	3	General Education Elective ³	<u>3</u>
<u>STAT 3113 or 3117</u>	<u>3</u>	General Education Elective²	<u>3</u>
<u>Technical Elective</u> ⁴	<u>2</u>	<u>PHYSICS 2305</u> ¹	3
<u>MATH 3304</u> ¹	<u>3</u>	<u>Technical Elective</u> ⁴	<u>3</u>
	14.5		17

Senior Year

First Semester	Credits	Second Semester	Credits
<u>CER ENG 4096</u> ¹	<u>3</u>	<u>CER ENG 4097</u>	3
<u>CER ENG 4250</u>	3	<u>CER ENG 4220</u>	3
<u>CER ENG 4410</u>	3	<u>CER ENG 4240</u>	3
General Education Elective ³	<u>3</u>	General Education Elective ³	<u>3</u>
Technical Elective ⁴	3	Technical Elective ⁴	3
	15		15

Total Credits: 128

1

A grade of "C" or better is required in the following courses to satisfy prerequisite requirements for subsequent coursework and to meet graduation criteria: CER ENG 2110, CER ENG 2315, CER ENG 2325, CER ENG 3220, CER ENG 3230, CER ENG 3315, CER ENG 4096, CHEM 1310, CHEM 1320, CIV ENG 2200, CIV ENG 2210, MATH 1214, MATH 1215, MATH 3304, PHYSICS 1135, PHYSICS 2135, PHYSICS 2305.

2

Both COMP SCI 1972 and COMP SCI 1982, or both COMP SCI 1973 and COMP SCI 1983.

3

Gen. Ed. electives must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

4

Students may choose to obtain a Ceramic Engineering degree with or without a declared emphasis area. A major change request form is required to add an emphasis area option to the degree program. For students who seek a Ceramic Engineering degree without a formal emphasis, these emphasis areas may guide the choice of their Technical Electives. Technical Electives must be selected from upper-level (i.e., 2000-level with pre-requisite or 3000-level and above) courses with advisor approval in any of the following disciplines: MATH, STAT, PHYS, CHEM, BIO SCI, GEOLOGY, COMP SCI, IS&T, ENG MGT, or any engineering program. Courses designated BUS, ECON, EDUC, ERP, MIL SCI, or any Humanities or Social Sciences program do not satisfy Technical Electives requirements.

5

Students may replace SP&M S 1185 with the ROTC sequence of MIL ARMY 4250 and MIL ARMY 4500 or MIL AIR 4110 and MIL AIR 4120.

Emphasis Areas

Requires 9 or more credit hours from approved course lists. Up to 3 credit hours of Cer Eng 4099-Research permitted with department approval.

Biomaterials

<u>BME 4100</u>	<u>Biomedical Polymers and Metals</u>	<u>3</u>
<u>BME 5200</u>	<u>Materials as Hard Tissue Devices</u>	<u>3</u>
<u>CER ENG 3110</u>	<u>Introduction to Biomedical Engineering</u>	<u>3</u>
<u>MS&E 5210</u>	<u>Tissue Engineering</u>	<u>3</u>
<u>MS&E 5310</u>	<u>Biomaterials I</u>	<u>3</u>

Energy Materials

<u>CIV ENG 5642</u>	<u>Sustainability, Population, Energy, Water, and Materials</u>	<u>3</u>
<u>ENG MGT 5513</u>	<u>Energy and Sustainability Management Engineering</u>	<u>3</u>
<u>GEO ENG 5556</u>	<u>Renewable Energy Systems</u>	<u>3</u>
<u>MECH ENG 5537</u>	<u>Fuel Cell Principles</u>	<u>3</u>
<u>MECH ENG 5541</u>	<u>Applied Energy Conversion</u>	<u>3</u>
<u>MIN ENG 4524</u>	<u>Energy Economics</u>	<u>3</u>
<u>MS&E 5230</u>	<u>Energy Materials</u>	<u>3</u>

Functional Materials

<u>CER ENG 5420</u>	<u>Optical Properties Of Materials</u>	<u>3</u>
<u>PHYSICS 4323</u>	<u>Elementary Solid State Physics</u>	<u>3</u>
<u>SEMI ENG 2100</u>	<u>Fundamentals of Semiconductor Materials</u>	<u>3</u>
<u>SEMI ENG 3100</u>	<u>Semiconductor Materials Processing</u>	<u>3</u>
<u>SEMI ENG 3101</u>	<u>Semiconductor Materials Processing Laboratory</u>	<u>3</u>
<u>SEMI ENG 4101</u>	<u>Semiconductor Device Fabrication and Testing Laboratory</u>	<u>3</u>

Materials for Extreme Environments

<u>CER ENG 5250</u>	<u>Refractories</u>	<u>3</u>
<u>MET ENG 4637</u>	<u>Material Selection, Fabrication, And Failure</u>	<u>3</u>
<u>MET ENG 5170</u>	<u>Nuclear Materials I</u>	<u>3</u>
<u>MET ENG 5310</u>	<u>Corrosion and Its Prevention</u>	<u>3</u>

<u>MS&E 5330</u>	<u>Composite Materials Science and Engineering</u>	<u>3</u>
<u>Computational Materials Science and Engineering</u>		
<u>CHEM 5001</u>	<u>Special Topics (Practical Computational Modeling for Chemistry and Materials Science)</u>	<u>3</u>
<u>MECH ENG 5212</u>	<u>Introduction to Finite Element Analysis</u>	<u>3</u>
<u>MS&E 5001</u>	<u>Special Topics (Applied Artificial Intelligence for Materials Engineering)</u>	<u>3</u>
<u>PHYSICS 5409</u>	<u>Computational Physics Laboratory</u>	<u>3</u>
<u>SEMI ENG 4100</u>	<u>Semiconductor Device Simulation</u>	<u>3</u>
<u>SEMI ENG 4200</u>	<u>Semiconductor Process Simulation</u>	<u>3</u>
<u>Materials Characterization and Analysis</u>		
<u>CER ENG 5115</u>	<u>X-Ray Diffraction Analysis</u>	<u>3</u>
<u>CHEM 2510</u>	<u>Analytical Chemistry I</u>	<u>4</u>
<u>CHEM 3310</u>	<u>Inorganic Chemistry I</u>	<u>3</u>
<u>CHEM 3329</u>	<u>Inorganic Chemistry Laboratory</u>	<u>1</u>
<u>CHEM 3510</u>	<u>Analytical Chemistry II</u>	<u>4</u>
<u>MET ENG 5520</u>	<u>Electron Microscopy</u>	<u>3</u>

Justification for request

Ceramic Engineering faculty approved the following major changes by votes in 2025 and 2026: Removal of Advanced Chemistry Elective. Addition of Programming Elective. Addition of Cer Eng 2010 Seminar and Cer Eng 3010 Seminar. Replacing Cer Eng 3325 with Cer Eng 3425 in lab sequence. Replacing Cer Eng 3210 with Cer Eng 3320. Addition of six emphasis areas.

Attach Budget

System Approval Letter

MDHE Approval

Supporting Documents [Program Change \(PC\) Form.docx](#)
[Provost approval.pdf](#)
[CeramicEngineeringAY26-Revised Approved.pdf](#)

Reviewer

Comments

Hannah Johnson (hjh9x) (03/05/26 9:08 am): Moved courses in emphasis areas from a sentence format to a course list format.

Hannah Johnson (hjh9x) (03/05/26 11:12 am): Added Revised Approval PDF which contains the Course Lists form the emphasis areas.

Hannah Johnson (hjh9x) (03/05/26 1:19 pm): Alphabetized all course listings.

Hannah Johnson (hjh9x) (03/13/26 9:40 am): Hyperlinked CER ENG 2200, CER ENG 2315, CIV ENG 2200, Math 1214, COMP SCI 1972, COMP SCI 1982, COMP SCI 1973, and COMP SCI 1983 in footnotes 1 and 2.

Crystal Wilson (wilsoncry) (03/17/26 3:27 pm): Changed Cer Eng 2200 back to Cer Eng 3230 because the CC is an affecting change and may go through for fall 2027. Changed Cer Eng 3320 back to Cer Eng 3210 because Cer Eng 4310 has a pre-req of Cer Eng 3210 and Cer Eng 3320 CC may go through for fall 2027.

Crystal Wilson (wilsoncry) (03/17/26 3:46 pm): Changed Cer Eng 3415 to Cer Eng 3410 because the CC is an affecting change that may go through for fall 2027.

Crystal Wilson (wilsoncry) (03/18/26 10:58 am): Corrected formatting for Biomaterials heading.

Crystal Wilson (wilsoncry) (03/18/26 3:31 pm): Added Physics 1135 to footnote 1 because the course has a footnote 1 on the plan of study grid.

Crystal Wilson (wilsoncry) (03/19/26 1:38 pm): Removed Cer Eng 2210 from footnote 1 as this course is being removed from the plan of study grid and was still listed in the footnotes. Okay per department.

Program Change Request

Date Submitted: 03/03/26 11:06 am

Viewing: **CV ENG-BS : Civil Engineering BS**

Last approved: 07/01/25 11:08 am

Last edit: 03/16/26 8:07 am

Changes proposed by: William Showalter (wes)

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

In Workflow

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

Approval Path

1. 03/06/26 5:45 am
Subhas
Venayagamoorthy
(skv7d8): Approved
for RCIVILEN Chair
2. 03/16/26 8:07 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 03/16/26 11:15 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Sep 27, 2013 by
Lahne Black (lahne)
2. Aug 6, 2014 by
Lahne Black (lahne)
3. Sep 21, 2015 by
Genda Chen (gchen)
4. Mar 3, 2020 by
ershenb
5. May 2, 2022 by Jody
Seely (seelyj)
6. Jul 1, 2025 by
William Showalter
(wes)

Supporting

Documents

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
CIM Prospectus	
Academic Level	Undergraduate
Program Code	CV ENG-BS
Department	Civil Engineering
Discipline	Civil Engineering
Offered by	
Title	Civil Engineering BS
CIP Code	

Purpose

Intended Audience

Program-Specific

Admission

Program Requirements and Description

Civil Engineering

Bachelor of Science

The Civil 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.

For the Bachelor of Science degree in Civil Engineering a minimum of 130 ~~129~~ credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. An average of at least two grade points per credit hour must be attained. An average of at least two grade points per credit hour must also be attained in all courses taken in Civil Engineering.

Freshman Year

First Semester	Credits	Second Semester	Credits
<u>CHEM 1100</u>	<u>1</u>	<u>MATH 1215</u>	4
<u>CHEM 1305</u>	<u>4</u>	<u>MECH ENG 1720</u>	3
<u>CHEM 1319</u>	<u>1</u>	<u>PHYSICS 1135</u>	4
<u>ENGLISH 1120</u>	3	Gen Ed Elective ¹	3
<u>FR ENG 1100</u> ²	1	Gen Ed Elective ¹	3
CHEM 1310	5		
& CHEM 1319			
<u>HISTORY 1200</u> , or <u>1300</u> , or <u>1310</u> , or <u>POL SCI 1200</u> ¹	3		
<u>MATH 1214</u> or <u>1211</u>	4		
	17		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
<u>CIV ENG 2003</u> ²	3	<u>CIV ENG 2210</u> ²	3
<u>CIV ENG 2200</u> ²	3	<u>CIV ENG 2211</u> ²	1
<u>CIV ENG 2401</u> ²	3	<u>GEO ENG 1150</u>	3
<u>MATH 2222</u>	4	<u>MATH 3304</u>	3
<u>PHYSICS 2135</u>	4	<u>MECH ENG 2350</u>	2
		<u>STAT 3113</u>	3
	17		15

Junior Year

First Semester	Credits	Second Semester	Credits
<u>CIV ENG 2601</u> ²	3	<u>CIV ENG 3116</u> ²	3
<u>CIV ENG 3201</u> ²	3	<u>CIV ENG 3334</u> ²	4

CIV ENG 3330 ²	3	CIV ENG 3500 ²	3
CIV ENG 3715 ²	3	CIV ENG 3842 ²	3
ENGLISH 1160 , or 3560 , or SPM S 1185 ¹	3	CIV ENG 4448 ²	3
ENG MGT 1210 ²	2		
	17		16
Senior Year			
First Semester	Credits	Second Semester	Credits
CIV ENG 3210 ²	3	CIV ENG 4097 ²	3
CIV ENG 3220 ²	3	CIV ENG Depth Elective ^{3,4}	3
CIV ENG 4010 ²	1	CIV ENG Tech Elective ^{3,5}	3
(2) CIV ENG Depth Electives ^{3,4}	6	CIV ENG Tech Elective ^{3,5}	3
General Education Humanities and Fine Arts Elective ¹	3	Gen Ed Elective ¹	3
	16		15

Total Credits: 130

1

Gen Ed electives must fulfill the Missouri S&T general education requirements as applicable to the students catalog year.

2

A grade of 'C' or better required to satisfy graduation requirements.

3

A grade of 'C' or better may be required in CE technical and depth elective prerequisite courses. Refer to the Missouri S&T undergraduate catalog for this prerequisite information.

4

Choose depth electives using Guidelines for Depth and Technical Electives.

5

Choose technical electives using Guidelines for Depth and Technical Electives.

Note: All Civil Engineering students must take the Fundamentals of Engineering examination prior to graduation.

A passing grade on this examination is not required to earn a B.S. degree; however, it is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process as described in Assessment Requirements found elsewhere in this catalog. Students must sign a release form giving the University access to their Fundamentals of Engineering Examination score.

Guidelines for Depth and Technical Electives

Please consult the Department's Advising Center or your academic advisor for guidelines regarding the selection of depth and technical electives. A maximum total of 6 credit hours of independent study ([CIV ENG 5000](#) or [CIV ENG 4099](#)) can be used as depth or technical electives in the B.S. Civil Engineering curriculum.

Course Listings by Area

Construction Engineering

<u>CIV ENG 5441</u>	Professional Aspects Of Engineering Practice	3
<u>CIV ENG 5442</u>	Construction Planning and Scheduling Strategies	3
<u>CIV ENG 5445</u>	Construction Methods	3
<u>CIV ENG 5446</u>	Management Of Construction Costs	3
<u>CIV ENG 5448</u>	Green Engineering: Analysis of Constructed Facilities	3
<u>CIV ENG 5449</u>	Engineering and Construction Contract Specifications	3
<u>CIV ENG 5451</u>	Information Technology Applications in the Construction Industry	3
<u>CIV ENG 5452</u>	Pre-Project Planning and Feasibility Studies	3
<u>CIV ENG 5453</u>	Logistics for Construction Industry	3
<u>CIV ENG 5454</u>	Construction Technology for High-Rise Buildings	3
<u>CIV ENG 5455</u>	Construction Industry Best Practices	3

Materials Engineering

<u>CIV ENG 5112</u>	Bituminous Materials	3
<u>CIV ENG 5113</u>	Composition And Properties Of Concrete	3
<u>CIV ENG 5117</u>	Asphalt Pavement Design	3
<u>CIV ENG 5118</u>	Smart Materials and Sensors	3
<u>CIV ENG 5156</u>	Pavement Design	3

Environmental Engineering

<u>CIV ENG 3615</u>	Water And Wastewater Engineering	3
<u>CIV ENG 5605</u>	Environmental Systems Modeling	3
<u>CIV ENG 5619</u>	Environmental Engineering Design	3
<u>CIV ENG 5630</u>	Remediation of Contaminated Groundwater and Soil	3
<u>CIV ENG 5635</u>	Phytoremediation and Natural Treatment Systems: Science and Design	3
<u>CIV ENG 5640</u>	Environmental Law And Regulations	3
<u>CIV ENG 5642</u>	Sustainability, Population, Energy, Water, and Materials	3
<u>CIV ENG 5650</u>	Public Health Engineering	3

<u>CIV ENG 5660</u>	Introduction To Air Pollution	3
<u>CIV ENG 5662</u>	Air Pollution Control Methods	3
<u>CIV ENG 5665</u>	Indoor Air Pollution	3
<u>CIV ENG 5670</u>	Solid Waste Management	3
Geotechnical Engineering		
<u>CIV ENG 4729</u>	Foundation Engineering	3
<u>CIV ENG 5715</u>	Intermediate Soil Mechanics	3
<u>CIV ENG 5716</u>	Geotechnical Earthquake Engineering	3
<u>CIV ENG 5729</u>	Foundation Engineering II	3
<u>CIV ENG 5744</u>	Geosynthetics in Engineering	3
<u>CIV ENG 5750</u>	Transportation Applications of Geophysics	3
Water Resources Engineering		
<u>CIV ENG 5330</u>	Unsteady Flow Hydraulics	3
<u>CIV ENG 5331</u>	Hydraulics Of Open Channels	3
<u>CIV ENG 5332</u>	Transport Processes in Environmental Flows	3
<u>CIV ENG 5333</u>	Intermediate Hydraulic Engineering	3
<u>CIV ENG 5335</u>	Water Infrastructure Engineering	3
<u>CIV ENG 5337</u>	River Mechanics And Sediment Transport	3
<u>CIV ENG 5338</u>	Hydrologic Engineering	3
<u>CIV ENG 5360</u>	Water Resources And Wastewater Engineering	3
Structural Engineering		
<u>CIV ENG 5118</u>	Smart Materials and Sensors	3
<u>CIV ENG 5203</u>	Applied Mechanics In Structural Engineering	3
<u>CIV ENG 5205</u>	Structural Analysis II	3
<u>CIV ENG 5206</u>	Low-Rise Building Analysis and Design	3
<u>CIV ENG 5207</u>	Computer Methods of Structural Analysis	3
<u>CIV ENG 5208</u>	Structural Dynamics	3

<u>CIV ENG 5209</u>	Wind Engineering	3
<u>CIV ENG 5210</u>	Advanced Steel Structures Design	3
<u>CIV ENG 5220</u>	Advanced Concrete Structures Design	3
<u>CIV ENG 5222</u>	Prestressed Concrete Design	3
<u>CIV ENG 5231</u>	Infrastructure Strengthening with Composites	3
<u>CIV ENG 5260</u>	Analysis And Design Of Wood Structures	3
<u>CIV ENG 5270</u>	Structural Masonry Design	3
Transportation Engineering		
<u>CIV ENG 5250</u>	Air Transportation	3
<u>CIV ENG 5510</u>	Geometric Design Of Highways	3
<u>CIV ENG 5513</u>	Traffic Engineering	3
<u>CIV ENG 5515</u>	Advanced Traffic Operations and Capacity Analysis	3

Justification for
request

Chemistry Department created 1305 to replace Chem 1310 for degrees that do not require 1320.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Crystal Wilson (wilsoncry) (03/16/26 8:07 am): Added Chem 1100 to plan of study grid per department approval because Chem 1100 is a requisite for Chem 1319.

Program Change Request

Date Submitted: 03/24/26 12:24 pm

Viewing: **CYBERMG-CT : Cybersecurity and Information Assurance Management CT**

Last approved: 09/20/24 2:59 pm

Last edit: 03/24/26 12:24 pm

Changes proposed by: Cecil Eng Huang Chua (cecq8z)

Catalog Pages Using
this Program

[Information Science and Technology](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Certificate
Academic Level	Graduate
Program Code	CYBERMG-CT
Department	Jaggi School of Business
Discipline	Info Science & Technology
Title	

In Workflow

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

Approval Path

1. 03/24/26 1:05 pm
Cassie Elrod (cassa):
Approved for
RINFSCTE Chair
2. 03/26/26 12:12 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
3. 03/26/26 3:24 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Jun 12, 2019 by ershenb
2. Mar 4, 2021 by Cecil Eng Huang Chua (cchua)
3. Jun 10, 2021 by Cecil Eng Huang Chua (cchua)
4. Jul 20, 2021 by Marita Raper (tibbettsmg)
5. Sep 20, 2024 by Cecil Eng Huang Chua (cchua)

Cybersecurity and Information Assurance Management CT

CIP Code 43.0403 - Cyber/Computer Forensics and Counterterrorism.

Intended Audience

Distance (online) Students

Main Campus Students

Program Requirements and Description

Cybersecurity and Information Assurance Management

Cybersecurity is one of the fastest growing employment segments in IT. As technology grows and progresses, with our devices and lives becoming more and more interconnected, the challenges of cybersecurity and information assurance will continue to grow. This presents a career to those with the necessary skills that will be exciting, rewarding, fast-paced, and highly sought after.

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

Required Courses:

[BUS 5910](#)

Privacy and Information Security

[IS&T 5680](#)

Digital Media Development and Interactive Design

[IS&T 6336](#)

~~Internet Computing and the Internet of Things~~

IS&T 5725

Fundamentals of Cybersecurity Analytics

IS&T 5780

Human and Organizational Factors in Cybersecurity

Justification for
request

The course IST 5780 was not offered because no one was available to teach it. This has been rectified and the course has been resurrected. IST 6336 is a mandatory course and so removing it from the certificate does not compromise educational goals.

Attach Budget

System Approval
Letter

[Cybersecurity and Information Assurance Management-approvals.pdf](#)

MDHE Approval

Supporting
Documents

[cybersecsigs.pdf](#)

Reviewer
Comments

Program Change Request

Date Submitted: 03/04/26 10:07 am

Viewing: **CYBERMG-MI : Cybersecurity**

Management and Information Assurance

Minor

Last approved: 06/14/24 1:07 pm

Last edit: 03/04/26 10:07 am

Changes proposed by: Cecil Eng Huang Chua (cecq8z)

Catalog Pages Using
this Program

[Business and Management Systems](#)
[Information Science and Technology](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Minor
Academic Level	Undergraduate
Program Code	CYBERMG-MI
Department	Jaggi School of Business
Discipline	Info Science & Technology
Title	

In Workflow

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

Approval Path

1. 03/10/26 10:19 am
Cassie Elrod (cassa):
Approved for
RINFSCTE Chair
2. 03/11/26 4:12 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
3. 03/11/26 4:14 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Apr 7, 2017 by barryf
2. Jun 26, 2017 by kristyg
3. Jun 26, 2017 by Crystal Wilson (wilsoncry)
4. Feb 3, 2021 by Cecil Eng Huang Chua (cchua)
5. Jun 10, 2021 by Cecil Eng Huang Chua (cchua)
6. Jun 14, 2024 by Cecil Eng Huang Chua (cchua)

Cybersecurity Management and Information Assurance Minor

CIP Code

Program Requirements and Description

Minor in Cybersecurity Management and Information Assurance

This minor requires the following 15 hours of coursework:

BUS 5910	Privacy and Information Security	3
IS&T 3333	Data Networks and Information Security	3
IS&T 3420	Introduction to Data Science and Management	3
IS&T 5680	Digital Media Development and Interactive Design	3
IS&T 5725	Fundamentals of Cybersecurity Analytics	3
IS&T 5780	Human and Organizational Factors in Cybersecurity	3

Justification for request

IST 3420 is a mandatory course in the degree. IST 5780 is a resurrected course as we now have someone to teach it.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer
Comments

Program Change Request

Date Submitted: 02/27/26 12:22 pm

Viewing: **ECON-BS : Economics BS**

Last approved: 07/01/25 11:09 am

Last edit: 03/27/26 1:30 pm

Changes proposed by: Michael Davis (davismc)

Catalog Pages Using
this Program
[Economics](#)

1 2 3 4 5 6

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	ECON-BS
Department	Economics
Discipline	Economics
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

Approval Path

1. 02/27/26 7:17 pm
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
2. 03/03/26 11:20 am
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
3. 03/03/26 11:27 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. May 28, 2015 by pantaleoa
2. May 28, 2015 by pantaleoa
3. Nov 18, 2015 by marcys
4. Aug 14, 2017 by Crystal Wilson (wilsoncry)
5. Jun 10, 2021 by Michael Davis (davismc)
6. Jun 7, 2023 by Michael Davis (davismc)
7. Jun 14, 2024 by Michael Davis (davismc)
8. Dec 20, 2024 by Jade McCain (jm558v)
9. Jul 1, 2025 by Melody Lo (mlc2d)

Economics BS

CIP Code

Intended Audience

Program-Specific

Program Requirements and Description

Bachelor of Science

Economics

In addition to the general university requirements for a bachelor of science degree and the required general education requirements, a student must complete:

ECON 1100, ECON 1200, ECON 2100, ECON 2200, ECON 3300, ECON 3333, and ECON 5360 with and ECON 4538 with a minimum grade of "C" in each.

At least 9 additional hours of economics electives, at or above the 2000 level, with a minimum grade of "C" in each.

BUS 1210, ENG MGT 2110, and STAT 3111.

Specific requirements for the Bachelor of Science degree are outlined in the sample program listed below.

Freshman Year

First Semester	Credits	Second Semester	Credits
<u>BIO SCI 1113</u> , or <u>1173</u> , or <u>1223</u>	3	<u>ECON 1200</u> ²	3
Lab w/Living or Physical Science Course	1	<u>HISTORY 1200</u> , or <u>1300</u> , or <u>1310</u>	3
<u>ECON 1100</u> ²	3	<u>IS&T 1551</u> , or <u>1561</u> , or <u>COMP SCI 1971</u> ³	3
<u>ENGLISH 1120</u>	3	<u>MATH 1212</u>	4
<u>MATH 1140</u>	3	<u>PSYCH 1101</u>	3
	13		16

Sophomore Year

First Semester	Credits	Second Semester	Credits
<u>ECON 2100</u> ²	3	<u>ART 1180</u> , or <u>1185</u> , or <u>MUSIC 1150</u> , or <u>THEATRE 1190</u>	3
<u>ENGLISH 1211</u> , or <u>1212</u> , or <u>1231</u> , or <u>1221</u> , or <u>1222</u> , or <u>2230</u>	3	<u>BUS 1210</u>	3
Free Elective	3	Chemistry, Geology, Geophysics, or Physics	3
<u>SP&M S 1185</u>	3	<u>ECON 2200</u> ²	3
<u>STAT 3111</u>	3	Free Electives	3
	15		15

Junior Year

First Semester	Credits	Second Semester	Credits
<u>ECON 3300</u> ²	3	<u>ECON 3333</u> ²	3
Economics Elective ⁴	3	Economics Electives ⁴	3
<u>ENGLISH 1600</u>	3	Free Elective	6
<u>ENG MGT 2110</u>	3	Gen Ed. Elective ¹	3
<u>POL SCI 1200</u>	3		
	15		15

Senior Year

First Semester	Credits	Second Semester	Credits
<u>ECON 4538</u> ³	3	Economics Elective ⁴	3
<u>ECON 5360</u> ²	3	Free Electives	13
Free Electives	12		
	15		16

Total Credits: 120

1

Gen Ed electives must fulfill the Missouri S&T general education requirements as applicable to the students catalog year.

2

A Grade of "C" or better is required for [ECON 1100](#), [ECON 1200](#), [ECON 2100](#), [ECON 2200](#), [ECON 3300](#), [ECON 3333](#), and [ECON 5360](#).

3

[COMP SCI 1971](#) must also include [COMP SCI 1981](#).

4

Must be 2000 level or higher, with a minimum grade of C.

~~Must be 2000 level or higher, with a minimum grade of C.~~

Decision Data Analytics Emphasis

Junior and Senior Years

[ECON 5360](#) Data Driven Strategic Insights 3

[ECON 5380](#) Data Intelligence using Case Studies 3

Financial Economics and Technology Emphasis

Junior and Senior Years

[ECON 4383](#) Financial Economics 3

[ECON 5337](#) Financial Mathematics 3

[ECON 5360](#) Data Driven Strategic Insights 3

Energy Economics Emphasis

Junior and Senior Years

[ECON 4440](#) Environmental And Natural Resource Economics 3

[ECON 4540](#) Energy Economics 3

Choose one of the following courses:

[ECON 3512](#) Mining Industry Economics 3

[ECON 5532](#) Advanced Mining Economics 3

Choose one of the following courses:

[CIV ENG 5642](#) Sustainability, Population, Energy, Water, and Materials 3

[ENG MGT 5513](#) Energy and Sustainability Management Engineering 3

Justification for request

ECON 5360 has been taught more regularly than ECON 4538, so it will be easier for the

students to meet the degree requirements. While being different classes both are generally data-oriented classes.

Attach Budget

System Approval

Letter

MDHE Approval

Supporting

Documents

Reviewer

Comments

Hannah Johnson (hjh9x) (03/03/26 11:20 am): Added periods to the end of footnotes 1 and 2. I added footnote 3 to the course ECON 5360. In footnote 3, I took out ECON 4538 and added ECON 5360.

Hannah Johnson (hjh9x) (03/27/26 1:30 pm): I removed footnote 1 "In-Major Writing Intensive" and updated the rest of the footnote to reflect this. Alphabetized the Energy Economics Emphasis listing, and the plan of study grid.

Program Change Request

Date Submitted: 03/06/26 4:20 pm

Viewing: **ENG MG-BS : Engineering Management
BS**

Last approved: 12/24/25 9:35 am

Last edit: 03/16/26 9:59 am

Changes proposed by: Joan Schuman (schumanj)

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

Final Catalog FS2026-SP2027

Rationale for

Supporting

Effective Catalog FS2026-SP2027
Edition
Start Term Fall 2026
Program Type Bachelor of Science
CIM Prospectus
Academic Level Undergraduate
Program Code ENG MG-BS
Department Engineering Mgt & Sys Engr
Discipline Engineering Management
Offered by
Title

In Workflow

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

Approval Path

1. 01/18/26 4:21 pm
Amaury Lendasse (altmg): Approved for RENG MNGT Chair
2. 01/21/26 11:13 am
Crystal Wilson (wilsoncry): Rollback to Initiator
3. 02/18/26 4:54 pm
Amaury Lendasse (altmg): Approved for RENG MNGT Chair
4. 02/20/26 3:26 pm
Hannah Johnson (hjh9x): Rollback to Initiator
5. 02/20/26 3:48 pm
Amaury Lendasse

- (altmg): Approved
for RENGMNGT
Chair
6. 02/24/26 8:26 am
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
7. 02/27/26 11:08 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
8. 02/27/26 1:14 pm
Hannah Johnson
(hjh9x): Rollback to
Initiator
9. 02/27/26 3:55 pm
Amaury Lendasse
(altmg): Approved
for RENGMNGT
Chair
10. 03/02/26 2:25 pm
Hannah Johnson
(hjh9x): Rollback to
Initiator
11. 03/06/26 4:25 pm
Amaury Lendasse
(altmg): Approved
for RENGMNGT
Chair
12. 03/18/26 11:51 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
13. 03/20/26 7:33 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
14. 03/30/26 3:56 pm

Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Sep 24, 2013 by
Lahne Black (lahne)
2. Apr 28, 2014 by
Stephen Raper
(sraper)
3. Jun 12, 2014 by
pantaleoa
4. Nov 18, 2014 by
kleb6b
5. Jan 30, 2015 by
Stephen Raper
(sraper)
6. Jul 20, 2015 by
pantaleoa
7. Jun 27, 2016 by
Stephen Raper
(sraper)
8. Jun 18, 2018 by
Stephen Raper
(sraper)
9. Mar 3, 2020 by
ershenb
10. Apr 6, 2022 by
Stephen Raper
(sraper)
11. Jun 14, 2022 by
Jennifer Pohlsander
(jpnfd)
12. Jun 7, 2023 by Joan
Schuman
(schumanj)
13. Jun 14, 2024 by
David Enke (enke)
14. Jan 6, 2025 by

Crystal Wilson

(wilsoncry)

15. Jul 1, 2025 by Joan

Schuman

(schumanj)

16. Dec 24, 2025 by

Crystal Wilson

(wilsoncry)

Engineering Management BS

CIP Code [15.1501 - Engineering/Industrial Management.](#)

Purpose

Intended Audience

Program-Specific

Admission

Program Requirements and Description

Bachelor of Science Engineering Management

The engineering management 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.

The bachelor of science degree in engineering management requires a minimum of 121 credit hours. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. An average of at least two grade points per credit hour must be attained. At least two grade points per credit hour must also be attained in all courses taken in engineering management.

Freshman Year

First Semester	Credits	Second Semester	Credits
<u>CHEM 1100</u>	1	<u>HISTORY 1200, or 1300, or 1310, or POL SCI 1200</u>	<u>3</u>
<u>CHEM 1305 or 1310</u>	<u>4</u>	<u>MATH 1215</u>	4
<u>CHEM 1319</u>	1	<u>MECH ENG 1720</u>	3
<u>ENGLISH 1120</u>	3	<u>PHYSICS 1135</u> ¹	4
<u>HISTORY 1200, or 1300, or 1310, or POL SCI 1200</u> ⁴	<u>3</u>	<u>Programming Elective</u> ³	<u>3</u>
<u>FR ENG 1100</u>	1	<u>General Education Elective</u> ²	<u>3</u>
<u>CHEM 1310</u> ¹	4		
<u>MATH 1214 or 1211</u> ¹	4		
	14		14

Sophomore Year

First Semester	Credits	Second Semester	Credits
<u>CIV ENG 2200</u> ¹	3	<u>ENG MGT 2110</u> ¹	3
<u>ENG MGT 1210</u> ¹	2	<u>ENG MGT 2211</u> ¹	3
<u>ENG MGT 2310</u> ¹	3	<u>PSYCH 1101</u> ⁴	<u>3</u>
<u>MATH 2222</u> ¹	4	<u>MATH 3304</u> ¹	3
<u>PHYSICS 2135</u> ¹	4	<u>Programming Elective</u> ³	<u>3</u>
		<u>STAT 3117 or 3113</u> ¹	<u>3</u>
	16		15

Junior Year

First Semester	Credits	Second Semester	Credits
<u>CIV ENG 2210</u>	3	<u>ENGLISH 3560 or 1160</u>	3
<u>ENG MGT 3310</u> ¹	3	<u>ENG MGT 3320</u> ¹	3
<u>ENG MGT 3510</u> ¹	3	<u>ENG MGT 4710</u> ¹	3
<u>PSYCH 1101</u>	<u>3</u>	<u>General Education Elective</u> ²	<u>3</u>
<u>SP&M S 1185</u> ⁴	3	<u>MECH ENG 2350</u>	2
<u>General Education Elective</u> ²	<u>3</u>	<u>MECH ENG 2527</u>	3
	15		17

Senior Year

First Semester	Credits	Second Semester	Credits
<u>ELEC ENG 2800</u>	3	Emphasis Area Required Course	3
Emphasis Area Required Course	3	<u>Emphasis Area Required Course</u>	<u>3</u>
Emphasis Area Required Course	3	<u>ENG MGT 4907</u> ¹	3

Emphasis Area Required Course	3	ENG MGT Technical Elective	3
<u>ENG MGT 4110¹</u>	3	General Education Elective ²	3
<u>General Education Elective²</u>	<u>3</u>		
	15		15

Total Credits: 121

Example Emphasis Area Programs for Engineering Management Students

One unique aspect of the engineering management degree is the student's ability to select an established emphasis area or create a specialized emphasis. Two examples of established emphasis areas are shown below.

Management of Technology

<u>ENG MGT 5410</u>	Industrial System Simulation	3
<u>ENG MGT 5511</u>	Technical Entrepreneurship	3
<u>ENG MGT 5512</u>	Legal Environment	3
<u>ENG MGT 5614</u>	Supply Chain Management Systems	3
ENG MGT Technical Elective (in consultation with your advisor)		3

Industrial Engineering

<u>ENG MGT 4310</u>	Materials Handling and Plant Layout	3
<u>ENG MGT 4330</u>	Human Factors	3
<u>ENG MGT 5410</u>	Industrial System Simulation	3
<u>ENG MGT 5414</u>	Introduction To Operations Research	3
ENG MGT Technical Elective (in consultation with your advisor)		3

ROTC

<u>MIL ARMY 3250</u>	<u>Adaptive Tactical Leadership</u>	<u>3</u>
<u>or MIL AIR 3110</u>	<u>Leading People & Effective Communication I</u>	
<u>MIL ARMY 3500</u>	<u>Leadership in Changing Environments</u>	<u>3</u>
<u>or MIL AIR 3120</u>	<u>Leading People & Effective Communication II</u>	
<u>MIL ARMY 4250</u>	<u>Developing Adaptive Leaders</u>	<u>3</u>
<u>or MIL AIR 4110</u>	<u>National Security, Leadership Responsibilities & Commissioning Preparation I</u>	

<u>MIL ARMY 4500</u>	<u>Leadership in a Complex World</u>	<u>3</u>
<u>or MIL AIR 4120</u>	<u>National Security, Leadership Responsibilities & Commissioning Preparation II</u>	
<u>ENG MGT Technical Elective (in consultation with advisor)</u>		<u>3</u>
General		
Engineering Area Courses (Engineering Discipline)		12
ENG MGT-Technical Elective (in consultation with your advisor)		3
<p>Note: All electives must be chosen in consultation with the student's advisor. Students must satisfy the common freshman year academic requirements in addition to the sophomore, junior, and senior year requirements listed above with a minimum of 121 hours. -</p>		
1		
Must have a grade of "C" or better in these courses for graduation.		
2		
General Education Elective must fulfill the Missouri S&T general education requirements applicable to the students catalog year.		
3		
The programming elective consists of a lecture and lab combination, and may be selected from <u>COMP SCI 1971/COMP SCI 1981</u> , <u>COMP SCI 1972/COMP SCI 1982</u> , or <u>COMP SCI 1570/COMP SCI 1580</u> . Note that <u>COMP SCI 1570/COMP SCI 1580</u> requires one more credit hour than the other options. The lecture component must be completed with a grade of "C" or better.		
4		
General Education discipline specific required course.		
<h2><u>Accelerated BS/MS Program Option for Engineering Management</u></h2>		
<p>Undergraduates currently majoring in Engineering Management at Missouri S&T may opt to apply for a Graduate Track Pathway, which allows students to transfer nine credit hours from their Missouri S&T Engineering Management bachelor's degree to their Engineering Management or Systems Engineering master's degree. In this pathway, a student can achieve both degrees faster than if pursuing the degrees separately. The benefits of the pathway for admitted students include:</p>		
1. Nine hours of 5000 graduate-level or above EMSE courses may be transferred from their Missouri S&T bachelor's degree to their EMSE master's degree,		
2. The classes taken for shared BS/MS credit may be taken at the lower undergraduate tuition rate,		
3. The GRE is not required for admission into the master's degree, and		
4. Work on a thesis project may begin before the bachelor's degree requirements are completed (if thesis option is chosen)		
<p>No M.S. degree requirements are changed. The MS degree may be either a thesis or non-thesis option. To be admitted, the student must complete the Grad Track Pathway Admission and Course Approval Form. To be admitted to the student must have approval of their EMSE academic advisor. The program may be combined with existing honors research and emphasis area options. Admitted students will only have an undergraduate record in</p>		

the Registrar's Office. Once they complete the bachelor's degree, and apply and are admitted into the master's degree then they will have a graduate record in the Registrar's Office. The Grad Track Pathway Admission and Course Approval Form must be completed when the student has one year left in the bachelor's program. Courses to be transferred will be identified on this form, and on Graduate Form 1, which is submitted after the student has been accepted to the master's program. Students must apply for admission to the master's program but will not be fully accepted until meeting all undergraduate degree requirements and earning their bachelor's degree. The nine hours of transferred coursework that will be taken as undergraduate credit must be approved by the student's academic advisor, and may not be undergraduate research, special problems, or courses transferred to the bachelor's degree.

To be eligible for the Grad Track Pathway, an EMSE undergraduate student must be:

- One year from graduation of their bachelor's degree (excluding the semester they are currently enrolled)
- Have at least a 3.50 GPA in all EMSE courses taken at Missouri S&T,
- Have a 3.0 cumulative GPA.

Students will be admitted into the master's degree, so long as they meet EMSE graduate student academic performance requirements: To remain in the pathway, the student must maintain good standing within the undergraduate EMSE program, and must maintain continuous enrollment at Missouri S&T. Students must maintain a cumulative GPA of at least 3.00 until they receive their bachelor's degree. Students must receive grades of B or better in the graduate courses they enroll in as part of the pathway course sequence. The semester admit term for the master's degree immediately follows the semester that the bachelor's degree is awarded. If the student exits the pathway before completion of the MS degree requirements, or fails to maintain continuous enrollment at Missouri S&T, the courses taken as part of the pathway may not apply toward graduate requirements in the event of future readmission. Credits earned in graduate-level courses will be posted according to established registrar procedures to the undergraduate transcript and will apply toward the student's undergraduate degree hours as needed to obtain the undergraduate degree and thus ensure all stated degree requirements are met. Once the bachelor's degree is awarded, the student is fully admitted to the master's program, Form 1 is approved, the courses from the pathway will be included on the student's graduate degree audit.

The student applicant is responsible for checking on how graduate coursework will affect scholarships and other financial aid. Once a student becomes a graduate student, they are not eligible for Federal Pell Grants, though are still eligible for Federal Financial Aid, and will be eligible for fellowships and teaching/research assistantships. International students should check with international affairs during completion of a Grad Track Pathway, to ensure immigration status will be maintained throughout the program.

Justification for
request

The total number of credit hours was reduced from 128 to 121 earlier and changes were made to the 4 year plan sequence to improve student success. Due to the changes in the Statistics department, STAT 3113 was added as an acceptable Statistic course. Also, Chem 1305 was added as the preferred class with Chem 1310 as an option for a required chemistry course.

Attach Budget

System Approval

Letter

MDHE Approval

Supporting

[EMGTPCROTCemphasis.docx](#)

Documents

[New Emphasis Proposal form sp26.pdf](#)

[New Emphasis Cover Letter with Approval sp26.pdf](#)

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/21/26 11:13 am): Rollback: Rollback. Need approval documentation for new emphasis area. Need to update senior year, second semester requirement for 'undefined'.

Hannah Johnson (hjh9x) (02/20/26 3:26 pm): Rollback: Rolling back because the DC shows the total credits as 118 and the campus minimum is 120 credits.

Hannah Johnson (hjh9x) (02/24/26 8:26 am): Alphabetized the Management of Technology emphasis section and all semesters in the plan of study group.

Hannah Johnson (hjh9x) (02/27/26 1:14 pm): Rollback: per request from Theresa Swift for corrections.

Hannah Johnson (hjh9x) (03/02/26 2:25 pm): Rollback: Rolling back because the Eng Mgt ROTC Emphasis Area needs to be listed on this ENG MG-BS DC form.

Crystal Wilson (wilsoncry) (03/16/26 9:59 am): Attached supporting documents.

Program Change Request

Date Submitted: 02/27/26 12:50 pm

Viewing: **FETECH-CTU : Financial Economics and Technology - CTU**

Last approved: 05/02/23 10:01 am

Last edit: 02/27/26 7:28 pm

Changes proposed by: Michael Davis (davismc)

Catalog Pages Using
this Program
[Economics](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Certificate
Academic Level	Undergraduate
Program Code	FETECH-CTU
Department	Economics
Discipline	Economics
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

Approval Path

1. 02/27/26 7:29 pm
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
2. 03/03/26 11:22 am
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
3. 03/03/26 11:28 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. May 2, 2023 by
Michael Davis
(davismc)

Financial Economics and Technology - CTU

CIP Code

Intended Audience

[Main Campus Students](#)

Program Requirements and Description

Financial Economics and Technology

This certificate aims to offer students across the campus an opportunity to gain knowledge and experience in Financial Economics & Technology. This certificate integrates courses synthesizing programming techniques, quantitative methods, and theoretical foundations in economics with applications in financial decisions. The certificate explores essential concepts in behavior economics, monetary economics, and international finance to develop foundational knowledge in financial economics. To give students an edge to pursue a career in the modern financial industry, this certificate is designed to be partially delivered by corporate executives who can offer students real financial problems to work on. Students completing this certificate are equipped with tools and knowledge especially valued by banks, consulting firms, financial technology, insurance firms, and investment firms.

To be awarded a certificate in Financial Economics & Technology, a student must meet the general requirement of taking the following four courses (12 credit hours):

Required Courses (12 hours):

ECON 3333	Computational Economics	3
ECON 4383	Financial Economics	3
ECON 5337	Financial Mathematics	3
or ECON 5543	Innovation Economics and Finance	
ECON 5360	Data Driven Strategic Insights	3

Justification for
request

ECON 5337 is co-listed with MATH 5737 and requires MATH 1215 (Calculus II) as a prerequisite.

Since Economics majors are not required to take Calculus II, and to provide greater flexibility enabling students to earn this certificate, ECON 5543 (Innovation Economics and Finance) is added as an alternative elective that does not require MATH 1215.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting Documents

<u>Econ-Undergrad CTs.pdf</u>
<u>MST PC January 2023.pdf</u>
<u>Econ-UGCT-Course change.pdf</u>

Reviewer
Comments

Program Change Request

Date Submitted: 03/05/26 8:45 am

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

Last approved: 12/24/25 9:35 am

Last edit: 03/27/26 2:43 pm

Changes proposed by: Katherine Grote (grotekr)

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

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	GE ENG-BS
Department	Earth Sciences and Engineering
Discipline	Geological Engineering
Title	

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

Approval Path

1. 03/04/26 7:30 pm
Stephen Gao (sgao):
Rollback to Initiator
2. 03/05/26 8:48 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair
3. 03/11/26 2:15 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
4. 03/16/26 11:12 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
5. 03/30/26 3:57 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC

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)
12. Jun 14, 2022 by Katherine Grote (grotekr)
13. Jun 14, 2024 by Katherine Grote (grotekr)
14. Mar 17, 2025 by Katherine Grote (grotekr)
15. Jul 1, 2025 by

Katherine Grote
(grotekr)
16. Dec 24, 2025 by
Crystal Wilson
(wilsoncry)

Geological Engineering BS

CIP Code

Intended Audier

Program Requirements and Description

Bachelor of Science Geological Engineering

For the bachelor of science degree in geological engineering a minimum of 124 ~~125~~ 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. 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. Additionally, students who complete the geological engineering BS have met all of the requirements to take the Fundamentals of Geology exam, which is the first step towards becoming a registered professional geologist. Geological engineering students are encouraged, but not required, to take the Fundamentals of Geology exam, as professional registration as both an engineer and a geologist is professionally advantageous.

The geological engineering program at Missouri S&T is characterized by comprehensive understanding of the principles ~~scientific basics~~ of engineering and geology ~~innovative application. We focus on solving the problems and innovative application meeting the needs of these principles. 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. We focus on solving the problems and meeting the needs of people and the environment related to geological materials, structures, or events. Geological engineering is an interdisciplinary field where differing components of science, engineering, and human professions are emphasized in research, analysis, synthesis, and design. Learning occurs in the classroom, laboratory, field, online, and combined modes.~~

Freshman Year

First Semester

Credits

Second Semester

Credits

<u>CHEM 1100</u>	1	<u>ENGLISH 1120</u>	<u>3</u>
CHEM 1310	4	<u>GEOLOGY 2611</u>	<u>3</u>
<u>CHEM 1305</u>	<u>4</u>	<u>MATH 1215</u>	4
<u>CHEM 1319</u>	1	<u>MECH ENG 1720</u>	3
ENGLISH 1120	3	<u>PHYSICS 1135</u>	4
<u>FR ENG 1100</u>	1	GEO ENG 1150 or GEOLOGY 1110	3
<u>GEO ENG 1150</u>	<u>3</u>	General Education Elective²	3
<u>HISTORY 1200</u> , or <u>1300</u> , or <u>1310</u> , or <u>POL SCI 1200</u>	3		
<u>MATH 1214</u> or <u>1211</u> ¹	4		
	17		17
Sophomore Year			
First Semester	Credits	Second Semester	Credits
<u>General Education Elective²</u>	<u>3</u>	<u>CIV ENG 2200</u>	3
<u>GEO ENG 2110</u>	<u>1</u>	GEO ENG 2110	1
<u>GEO ENG 3148</u>	3	GEOLOGY 2611	3
Programming Elective³	3	<u>GEO ENG 3175</u>	3
<u>MATH 2222</u>	4	General Education Elective²	3
<u>PHYSICS 2135</u>	4	<u>GEOLOGY 3620</u>	<u>3</u>
		<u>MATH 3304</u>	3
		<u>PHILOS 3225</u>	<u>3</u>
	15		15
Junior Year			
First Semester	Credits	Second Semester	Credits
<u>CIV ENG 2210</u>	3	<u>CIV ENG 3330</u>	3
<u>GEO ENG 5331</u>	3	<u>CIV ENG 3715</u> or <u>MIN ENG 5823</u>	3
<u>GEOLOGY 3310</u>	3	<u>GEO ENG 5174</u>	3
<u>GEOLOGY 3319</u>	1	Technical Elective ³	3
General Education Elective ²	3	Technical Elective ³	3
<u>MECH ENG 2350</u>	2		
	15		15
Senior Year			
First Semester	Credits	Second Semester	Credits
GEO ENG 4010	0.5	GEO ENG 4010	0.5
<u>GEO ENG 5441</u>	3	Eng Econ Elective ⁸	3
<u>GEO ENG 5443</u>	3	General Education Elective ²	3
Geophysics Elective ⁴	3	<u>GEO ENG 5090</u>	3
Technical Elective⁴	3	Geo Eng Elective ⁷	3
<u>ENGLISH 3560</u> ⁵	3	Statistics Elective ⁹	3
<u>Field Technical Elective⁶</u>	<u>3</u>		
	15		15

Total Credits: 124

1

MATH 1211 may be substituted for MATH 1214.

2

General Education Requirement: General education electives must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

3

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

4

Geophysics Elective: Select from GEO ENG 5736, GEO ENG 5761, or GEO ENG 5782.

5

General Education Requirement - discipline specific requirement

6

Field Technical Elective: Select from: GEO ENG 5736, GEOLOGY 5679, or other field-based elective approved by advisor. GEO ENG 5736 may be used to satisfy both the Geophysics elective requirement and the Field Technical elective requirement; if this is done, an additional engineering technical elective must be taken to maintain the total number of credit hours in the degree.

7

Geological Engineering Elective: Select from GEO ENG 5381, GEO ENG 5471, GEO ENG 5556, MIN ENG 5823, PET ENG 2510, PET ENG 3520, CIV ENG 3715, CIV ENG 4729, or CIV ENG 5715.

8

Engineering Economics Elective: Select from ENG MGT 5210, MIN ENG 3512, or PET ENG 4590 or both ENG MGT 1100 and ENG MGT 1210.

9

Statistics Elective: Select one course from GEO ENG 4115 or 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

<u>CIV ENG 3715</u>	Fundamentals of Geotechnical Engineering	3
<u>CIV ENG 4729</u>	Foundation Engineering	3
<u>GEO ENG 5146</u>	Applications Of Geographic Information Systems	3
<u>GEO ENG 5471</u>	Rock Engineering	3
<u>MIN ENG 5823</u>	Rock Mechanics	3
Environmental and Engineering Geophysics		
<u>GEO ENG 5144</u>	Remote Sensing Technology	3
<u>GEO ENG 5736</u>	Geophysical Field Methods	3
<u>GEO ENG 5761</u>	Transportation Applications of Geophysics	3
<u>GEO ENG 5782</u>	Environmental and Engineering Geophysics	3
<u>GEOPHYS 4241</u>	Electrical Methods In Geophysics	3
<u>GEOPHYS 4261</u>	Geophysical Instrumentation	1
<u>GEOPHYS 5231</u>	Seismic Data Processing	3
Groundwater Hydrology and Environmental Protection		
<u>CIV ENG 5640</u>	Environmental Law And Regulations	3
<u>GEO ENG 4276</u>	Environmental Aspects Of Mining	
<u>GEO ENG 5233</u>	Risk Assessment In Environmental Studies	3
<u>GEO ENG 5235</u>	Environmental Geological Engineering	3
<u>GEO ENG 5237</u>	Geological Aspects Of Hazardous Waste Management	3
<u>GEO ENG 5320</u>	Groundwater Modeling	3
<u>GEO ENG 5381</u>	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
<u>PET ENG 3330</u>	Formation Evaluation	3
Quarry and Mine Engineering		
<u>CIV ENG 3116</u>	Construction Materials, Properties And Testing	3
<u>GEO ENG 4276</u>	Environmental Aspects Of Mining	3
<u>GEO ENG 5471</u>	Rock Engineering	3
<u>GEO ENG 5575</u>	Aggregates And Quarrying	3
<u>MIN ENG 3913</u>	Mineral Identification and Exploration	3
<u>MIN ENG 5612</u>	Principles of Explosives Engineering	3

<u>MIN ENG 5822</u>	Strata Control	3
<u>MIN ENG 5823</u>	Rock Mechanics	3
<u>MIN ENG 5912</u>	Mine Power and Drainage	3
Renewable and Conventional Energy Resources		
<u>GEO ENG 5146</u>	Applications Of Geographic Information Systems	3
<u>GEO ENG 5556</u>	Renewable Energy Systems	3
<u>GEOLOGY 5511</u>	Applied Petroleum Geology	3
<u>MIN ENG 5322</u>	Coal Mining Methods	3
<u>MIN ENG 5422</u>	Coal Preparation	3
<u>MIN ENG 5823</u>	Rock Mechanics	3
<u>PET ENG 2510</u>	Fluid and Rock Properties	3
<u>PET ENG 3330</u>	Formation Evaluation	3
<u>PET ENG 3520</u>	Petroleum Reservoir Engineering	3
<u>PET ENG 4520</u>	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

Please see attached document

Attach Budget

System Approval
Letter

MDHE Approval

Supporting [curriculum changes spring 2026.docx](#)
Documents

Reviewer

Comments

Stephen Gao (sgao) (03/04/26 7:30 pm): Rollback: As you requested, I am rolling it back for changes.

Hannah Johnson (hjh9x) (03/05/26 12:19 pm): Alphabetized all course listings.

Crystal Wilson (wilsoncry) (03/11/26 1:44 pm): Placed period at end of footnote 10.

Hannah Johnson (hjh9x) (03/27/26 2:43 pm): Edited to remove footnote 3 "Programming Elective: Select from COMP SCI 1500..." due to the Programming Elective being removed and updated the other footnotes to reflect this change.

Program Change Request

Date Submitted: 03/05/26 12:58 pm

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

BS

Last approved: 12/24/25 9:35 am

Last edit: 03/05/26 12:58 pm

Changes proposed by: Kelly Liu (liukh)

Catalog Pages Using
this Program

[Geology and Geophysics](#)

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

Approval Path

1. 03/05/26 1:00 pm
Stephen Gao (sgao):
Approved for
RGEOENG Chair
2. 03/11/26 2:03 pm
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 03/16/26 11:11 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. May 6, 2014 by Francisca Oboh-Ikuenobe (ikuenobe)
2. Apr 24, 2015 by wronk
3. Mar 27, 2017 by Kelly Liu (liukh)
4. Jun 18, 2018 by Kelly Liu (liukh)
5. Jun 14, 2019 by Sharon Lauck (laucks)
6. Jul 1, 2020 by Sharon Lauck (laucks)
7. Jun 10, 2021 by Sharon Lauck (laucks)
8. Oct 28, 2021 by Katherine Grote (grotekr)
9. Sep 16, 2024 by Crystal Wilson (wilsoncry)
10. Mar 26, 2025 by Kelly Liu (liukh)
11. Jul 1, 2025 by Kelly Liu (liukh)
12. Dec 24, 2025 by Crystal Wilson (wilsoncry)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
CIM Prospectus	
Academic Level	Undergraduate
Program Code	GL&GPH-BS
Department	Earth Sciences and Engineering
Discipline	Geology
Offered by	
Title	Geology and Geophysics BS
CIP Code	40.0699 - Geological and Earth Sciences/ Geosciences, Other.

Purpose

Intended Audience

Program-Specific

Admission

Program Requirements and Description

Bachelor of Science

Geology and Geophysics

A minimum of 121 credit hours is required for a Bachelor of Science degree in Geology and Geophysics. Students must average at least two grade points per credit hour and must obtain a letter grade of "C" or better in all Geology and Geophysics courses.

Freshman Year

First Semester	Credits	Second Semester	Credits
<u>GEOLOGY 1110</u> or <u>GEO ENG 1150</u>	3	<u>GEOLOGY 1120</u>	3
<u>ENGLISH 1120</u>	3	<u>GEOLOGY 1129</u>	1
CHEM 1310	4	Elective (Science & Eng) ²	3
<u>CHEM 1305</u>	4	General Education Elective ¹	3
<u>CHEM 1319</u>	1	<u>MATH 1214</u> or <u>1211</u> ³	4
<u>CHEM 1100</u>	1		
General Education Elective ¹	3		
	15		14

Sophomore Year

First Semester	Credits	Second Semester	Credits
<u>GEOPHYS 3210</u>	3	<u>GEOLOGY 2611</u>	3
<u>MATH 1215</u>	4	<u>GEOLOGY 3410</u>	3
<u>COMP SCI 1500</u>	3	<u>ENGLISH 1160</u> , or <u>3560</u> , or <u>SPM S 1185</u>	3
Elective (Geo & Geop) ⁴	3	Elective (Geo & Geop) ⁴	3
General Education Elective ¹	3	<u>HISTORY 1200</u> , or <u>1300</u> , or <u>1310</u> , or <u>POL SCI 1200</u>	3
	16		15

Junior Year

First Semester	Credits	Second Semester	Credits	Summer Semester	Credits
<u>GEOLOGY 3310</u>	3	<u>GEOLOGY 3620</u>	3	<u>GEOLOGY 4097</u>	3
<u>GEOLOGY 3319</u>	1	<u>GEOLOGY 3629</u>	1		
<u>PHYSICS 1135</u> ⁵	4	<u>GEOLOGY 2096</u>	3		
<u>STAT 3113</u> , or <u>3117</u> , or <u>GEO ENG 4115</u>	3	Elective (Geo & Geop) ⁴	3		
Elective (Geo & Geop) ⁴	3	General Education Elective ¹	3		
	14		13		3

Senior Year

First Semester	Credits	Second Semester	Credits
<u>GEOLOGY 4010</u>	0.5	<u>GEOPHYS 5096</u>	3

Elective (Science & Eng) ²	6	Elective (Science & Eng) ²	9
Elective (Geo & Geop) ⁴	9	Free Elective ⁶	3
		<u>GEOLOGY 4010</u>	.5
	15.5		15.5

Total Credits: 121

1

General Education Requirement. General education electives must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

2

All Geology and Geophysics students must complete at least 18 hours of elective course work in science (which may include additional Geology/Geophysics courses), mathematics, and/or engineering, courses required for the basic program. 12 hours of this course work must be numbered 2000 or above.

3

MATH 1211 may be substituted for MATH 1214.

4

All Geology and Geophysics students must complete at least 21 hours of elective course work numbered 2000 or above in Geology/Geophysics, in addition to the required core curriculum.

5

Students may substitute PHYSICS 1111 and PHYSICS 1119 for PHYSICS 1135.

6

Free elective hours may be taken in any combination of credit hours (1, 2, 3, etc.) and can include any course offerings at the University.

Core Curriculum

Taken by all students in Geology & Geophysics.		
<u>GEOLOGY 1110</u>	Physical and Environmental Geology	3
<u>GEOLOGY 1120</u>	Evolution Of The Earth	3
<u>GEOLOGY 1129</u>	Evolution of the Earth Laboratory ⁵	1
<u>GEOLOGY 2611</u>	Physical Mineralogy And Petrology	3
<u>GEOLOGY 3310</u>	Structural Geology	3
<u>GEOLOGY 3319</u>	Structural Geology Lab	1
<u>GEOLOGY 3410</u>	Introduction To Geochemistry	3
<u>GEOLOGY 3620</u>	Stratigraphy And Sedimentation	3
<u>GEOLOGY 3629</u>	Stratigraphy Lab	1
<u>GEOLOGY 4010</u>	Seminar	0.5

<u>GEOLOGY 2096</u>	Field Geology	3
<u>GEOLOGY 4097</u>	Advanced Field Geology	3
<u>GEOPHYS 3210</u>	Introduction to Geophysics	3
<u>GEOPHYS 5096</u>	Global Tectonics	3
Total Credits		33.5

Geology and Geophysics Focus Areas

Geochemistry

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

<u>GEOLOGY 3511</u>	Introduction to Mineral Deposits	3
<u>GEOLOGY 4451</u>	Aqueous Geochemistry	3
<u>GEOLOGY 4461</u>	Isotope Geochemistry	3
<u>GEOLOGY 4631</u>	Advanced Igneous and Metamorphic Petrology	4
<u>GEOLOGY 4841</u>	Geological Field Studies	3
<u>GEOLOGY 5611</u>	Granites And Rhyolites	4
<u>GEOLOGY 5671</u>	Clay Mineralogy	3
<u>CER ENG 2110</u>	Atomic Structure Of Crystalline Ceramics	3
<u>CER ENG 3220</u>	Phase Equilibria	3

General Geology

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

<u>GEOLOGY 3511</u>	Introduction to Mineral Deposits	3
<u>GEOLOGY 4630</u>	Systematic Paleontology	3
<u>GEOLOGY 3811</u>	Fundamentals Of Geographic Information Systems	3
or <u>GEO ENG 3148</u>	Fundamentals Of Geographic Information Systems	

<u>GEOLOGY 4631</u>	Advanced Igneous and Metamorphic Petrology	4
<u>GEOLOGY 4711</u>	Paleoclimatology and Paleoecology	3
<u>GEOLOGY 4841</u>	Geological Field Studies	3
<u>GEOLOGY 5513</u>	Petroleum Geology	3
<u>GEOLOGY 5611</u>	Granites And Rhyolites	4
<u>GEOLOGY 5741</u>	Micropaleontology	3
<u>GEOLOGY 6311</u>	Advanced Structural Geology	3
<u>GEO ENG 3175</u>	Geomorphology And Terrain Analysis	3

Geophysics

Students must choose 1 math and 3 geophysics courses from the list. Students should also choose at least one additional course to be selected from an approved list and with guidance from student's advisor.

<u>MATH 2222</u>	Calculus III	4
<u>MATH 3304</u>	Elementary Differential Equations	3
<u>MATH 3108</u>	Linear Algebra I	3
<u>MATH 5325</u>	Partial Differential Equations	3
<u>GEOPHYS 4231</u>	Seismic Interpretation	3
<u>GEOPHYS 5202</u>	Exploration and Development Seismology	3
<u>GEOPHYS 5231</u>	Seismic Data Processing	3
<u>GEOPHYS 5261</u>	Computational Geophysics	3
<u>GEOPHYS 5736</u>	Geophysical Field Methods	3
or <u>GEO ENG 5736</u>	Geophysical Field Methods	
<u>GEOLOGY 4310</u>	Remote Sensing Technology	3

Groundwater and Environmental Geochemistry

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

<u>GEOLOGY 4431</u>	Methods Of Karst Hydrogeology	3
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<u>GEOLOGY 4451</u>	Aqueous Geochemistry	3
<u>GEOLOGY 4711</u>	Paleoclimatology and Paleoecology	3
<u>GEOPHYS 5782</u>	Environmental and Engineering Geophysics	3
or <u>GEO ENG 5782</u>	Environmental and Engineering Geophysics	
<u>BIO SCI 1173</u>	Introduction to Environmental Sciences	3
<u>ENV ENG 2601</u>	Fundamentals of Environmental Engineering and Science	3
<u>ENV ENG 5640</u>	Environmental Law And Regulations	3
<u>GEO ENG 5237</u>	Geological Aspects Of Hazardous Waste Management	3
<u>GEO ENG 5331</u>	Subsurface Hydrology	3
<u>GEO ENG 5381</u>	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3

Petroleum Geology

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

<u>GEOLOGY 4630</u>	Systematic Paleontology	3
<u>GEOLOGY 5311</u>	Depositional Systems	3
<u>GEOLOGY 5513</u>	Petroleum Geology	3
<u>GEOLOGY 5661</u>	Advanced Stratigraphy and Basin Evolution	3
<u>GEOLOGY 5741</u>	Micropaleontology	3
<u>GEOPHYS 5202</u>	Exploration and Development Seismology	3
<u>PET ENG 3330</u>	Formation Evaluation	3
<u>GEOLOGY 4310</u>	Remote Sensing Technology	3

Accelerated BS/MS Program Option for Geology and Geophysics Majors

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

The benefits for undergraduate students admitted to the program are:

Undergraduate and graduate courses may be chosen with greater flexibility,
Up to nine hours of 5000-level or above G&G coursework may apply to both the BS and MS requirements,
The classes taken for shared BS/MS credit may be taken at the lower undergraduate tuition rate,
The GRE is not required for admission,
Other graduate courses can be taken any time after entering the program as a dual enrolled student,
Work on a thesis project may begin before the BS requirements are completed.
To be eligible for the accelerated BS/MS G&G program, a G&G undergraduate must be at or beyond the junior level standing with a minimum of 48 credit hours. They must have successfully completed the Chemistry and Math requirements and have completed 21 credit hours of G&G courses at Missouri S&T with at least a 3.2 GPA in the G&G courses. To be admitted, the student must complete the program application and non-thesis MS students must have the recommendation of a G&G faculty member, while thesis MS students must have the recommendation of a G&G faculty member who agrees to serve as the graduate thesis advisor. All other MS degree requirements remain the same. The program may be combined with existing honors research, emphasis areas, and certificate options.
The Accelerated Program application must be completed within one semester after shared-credit courses are completed. Courses taken for shared credit will be identified on the application form. These courses will also be listed on the student's Graduate Form 1 to be submitted after the student enters the graduate program. The nine hours of shared-credit coursework, to be taken as undergraduate credit, must be approved by the academic advisor, and may not be undergraduate research, special problems, or transfer courses. An additional six credit hours of coursework for graduate credit (beyond the shared BS/MS credits) can be taken while in the undergraduate program by applying for dual undergraduate/graduate enrollment. Taking additional courses for graduate credit as a dual enrolled student will require formal application to the graduate program. Upon application, acceptance to the G&G MS degree from the Accelerated Program is automatic so long as the student remains in good standing (GPA above 3.0 and B's or better in all graduate courses) within the program. To remain in the Accelerated Program, the student must maintain good standing within the undergraduate G&G program and must maintain continuous enrollment at Missouri S&T. If the student exits the program before completion of the MS degree requirements, or fails to maintain continuous enrollment at Missouri S&T, the shared-credit courses may not apply toward graduate requirements in the event of future readmission.
It is the student's responsibility to check on how dual-enrollment status and graduate coursework affects scholarships and other financial aid. As a graduate student, you **are not** eligible for Federal Pell Grants. You are still eligible for Federal Financial Aid. You may be eligible for fellowships and teaching/research assistantships. It is the International student's responsibility to check with international affairs during completion of an accelerated BS/MS to ensure immigration status will be maintained throughout the program.

Justification for
request

At the request by the Department of Chemistry, the course requirement is being updated from Chem 1310 to Chem 1305. Chem 1305 is more appropriate for Geology & Geophysics students.

Attach Budget

System Approval

Letter

MDHE Approval

Supporting
Documents

Reviewer
Comments

Program Change Request

Date Submitted: 03/04/26 10:02 am

Viewing: **MARKET-MI : Marketing Minor**

Last approved: 02/23/24 10:50 am

Last edit: 03/11/26 4:23 pm

Changes proposed by: Cecil Eng Huang Chua (cecq8z)

Catalog Pages Using
this Program

[Business and Management Systems](#)
[Information Science and Technology](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Minor
Academic Level	Undergraduate
Program Code	MARKET-MI
Department	Jaggi School of Business
Discipline	Business
Title	

In Workflow

1. [RINFSCTE Chair](#)
2. [CCC Secretary](#)
3. [Social Sciences DSCC Chair](#)
4. [Pending CCC Agenda post](#)
5. [CCC Meeting Agenda](#)
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar

Approval Path

1. 03/10/26 10:28 am
Cassie Elrod (cassa):
Approved for
RINFSCTE Chair
2. 03/11/26 4:23 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
3. 03/11/26 5:32 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Apr 28, 2014 by barryf
2. Jul 14, 2015 by pantaleoa
3. Feb 3, 2021 by Cecil Eng Huang Chua (cchua)
4. Mar 8, 2021 by Marita Raper (tibbettsmg)
5. Jun 10, 2021 by Cecil Eng Huang Chua (cchua)
6. Feb 23, 2024 by Cecil Eng Huang Chua (cchua)

Marketing Minor

CIP Code

Program Requirements and Description

Minor in Marketing

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

ECON 1100	Principles Of Microeconomics	3
or ECON 1200	Principles Of Macroeconomics	
MKT 3110	Marketing	3
Three courses from the following list:		9
ERP 4610	Customer Relationship Management in ERP Environment	
MKT 3210	Consumer Behavior	
MKT 4580	Marketing Strategy	
MKT 5310	Digital Marketing and Promotions	
MKT 5320	Marketing for Non-Profits	

MKT 5410

Big Data Consumer Analytics

MKT 5762

Marketing Revolution with Machine Learning

Other marketing electives approved by the department (MKT 3000 and above)

Justification for
request

New course relevant to minor developed.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Hannah Johnson (hjh9x) (03/11/26 4:23 pm): Alphabetized the course list.

Program Change Request

Date Submitted: 10/17/25 11:19 am

Viewing: **MATH-MI : Mathematics Minor**

Last approved: 06/13/14 11:08 am

Last edit: 03/05/26 10:12 am

Changes proposed by: Crystal Wilson (wilsoncry)

Catalog Pages Using
this Program

[Mathematics](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Minor
Academic Level	Undergraduate
Program Code	MATH-MI
Department	Mathematics & Statistics
Discipline	Mathematics
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

Approval Path

1. 10/17/25 11:39 am
John Singler (singlerj): Approved for RMATHEMA Chair
2. 10/17/25 2:07 pm
Jade McCain (jm558v): Approved for CCC Secretary
3. 11/05/25 8:58 am
Crystal Wilson (wilsoncry): Rollback to RMATHEMA Chair for Sciences DSCC Chair
4. 03/05/26 10:12 am
John Singler (singlerj): Approved for RMATHEMA Chair

5. 03/05/26 11:56 am
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
6. 03/19/26 11:23 am
Katie Shannon
(shannonk):
Approved for
Sciences DSCC Chair
7. 03/30/26 3:57 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Apr 28, 2014 by
imorgan
2. Jun 13, 2014 by
pantaleoa
3. Jun 13, 2014 by
pantaleoa

Mathematics Minor

CIP Code

Inter

Program Requirements and Description

Mathematics Minor Curriculum

The minor will consist of at least 12 hours of MATH and/or STAT lecture ~~mathematics/statistics~~ courses at the 3000 or higher level, level*, 9 hours of which must be completed in residence at Missouri S&T, S&T and 3 hours of which must be at the 4000 or higher level, level, and passing all of them with at least a grade of "C". All courses counted towards the minor must be completed with a grade of "C" or better. Further, Further, MATH 3304 and MATH 3329 cannot both be counted, MATH 3103 and MATH 3108 cannot both be counted, and at most one of STAT 3111, STAT 3113, STAT 3115, and of STAT 3111, STAT 3113, STAT 3115 and STAT 3117 may be counted. Finally, the specific choice of courses is subject to the approval of the minor advisor.

*COMP SCI 3200%7CCode Introduction To Numerical Methods may be substituted for one of these courses.

Justification for
request

MATH 3103 and MATH 3329 are not currently offered. Cleaned up the language to reflect current practice. Removed the option of one out-of-department course that has been offered infrequently and for which in-department alternatives exist.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Crystal Wilson (wilsoncry) (11/05/25 8:58 am): Rollback: Rollback to Math department chair per email received from Dr. Shannon, sciences DSCC chair, on October 31. Dr. Runnion met with Dr. Singler to discuss the stat changes and they do not want to approve this form at this time.

Program Change Request

Date Submitted: 03/02/26 12:02 pm

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

Last approved: 02/23/26 8:55 am

Last edit: 03/27/26 11:30 am

Changes proposed by: Nishant Kumar (nkwtb)

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

In Workflow

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

Approval Path

1. 03/02/26 12:13 pm
David Bayless
(djbkqf): Approved
for RMECHENG
Chair
2. 03/03/26 11:28 am
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
3. 03/09/26 10:02 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Feb 24, 2014 by J. Keith Nisbett (nisbett)
2. Aug 6, 2014 by J. Keith Nisbett (nisbett)
3. Jul 21, 2015 by pantaleoa
4. May 3, 2018 by J. Keith Nisbett (nisbett)
5. Jun 14, 2019 by J. Keith Nisbett (nisbett)
6. Mar 3, 2020 by ershenb
7. Oct 8, 2020 by Crystal Wilson (wilsoncry)
8. May 5, 2021 by J. Keith Nisbett (nisbett)
9. Oct 28, 2021 by J. Keith Nisbett (nisbett)
10. May 2, 2022 by J. Keith Nisbett (nisbett)
11. Jun 7, 2023 by J. Keith Nisbett (nisbett)
12. Jun 14, 2024 by Nishant Kumar (nkwtb)
13. Nov 25, 2024 by Nishant Kumar (nkwtb)
14. Feb 15, 2025 by

Rationale for
Inactivation

Crystal Wilson
(wilsoncry)

15. Jul 1, 2025 by
Nishant Kumar
(nkwtb)

16. Jul 14, 2025 by
Crystal Wilson
(wilsoncry)

17. Dec 24, 2025 by
Crystal Wilson
(wilsoncry)

18. Feb 23, 2026 by
Crystal Wilson
(wilsoncry)

Supporting
Documents

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
CIM Prospectus	
Academic Level	Undergraduate
Program Code	MC ENG-BS
Department	Mechanical & Aerospace Engineering
Discipline	Mechanical Engineering
Offered by	
Title	Mechanical Engineering BS
CIP Code	

Purpose

Intended Audience

Program-Specific

Program Requirements and Description

Bachelor of Science Mechanical Engineering

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

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

Freshman Year

First Semester	Credits	Second Semester	Credits
CHEM 1305^a	4	Gen. Ed. Elective ^c	3
CHEM 1319	1	Gen. Ed. Elective ^c	3
ENGLISH 1120	3	MATH 1215^a	4
FR ENG 1100	1	MECH ENG 1720	3
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3	PHYSICS 1135^a	4
MATH 1214 or 1211^a	4		
	16		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
<u>CIV ENG 2200^a</u>	3	<u>MATH 3304^a</u>	3
<u>MATH 2222^a</u>	4	<u>MECH ENG 2360^a</u>	3
<u>MECH ENG 1761</u>	1	<u>MECH ENG 2519^a</u>	3
<u>MECH ENG 2653</u>	3	<u>MECH ENG 2761</u>	2
<u>PHYSICS 2135^a</u>	4	<u>MET ENG 2110^a</u>	3
		Programming Elective ^{a, b}	3
	15		17

Junior Year

First Semester	Credits	Second Semester	Credits
<u>CIV ENG 2210^a</u>	3	<u>ENGLISH 1160</u> , or <u>3560</u> , or <u>SPM S 1185</u>	3
<u>CIV ENG 2211</u>	1	<u>MECH ENG 3131</u>	3
Elective-Advanced Math/Stat ^d	3	<u>MECH ENG 3411^a</u>	3
<u>ELEC ENG 2800</u>	3	<u>MECH ENG 3525</u>	3
<u>MECH ENG 3313</u>	3	<u>MECH ENG 3708</u>	3
<u>MECH ENG 3521</u>	3	<u>MECH ENG 4840</u>	2
	16		17

Senior Year

First Semester	Credits	Second Semester	Credits
Gen. Ed. Elective ^c	3	Breadth elective ^h	3
Gen. Ed. Elective ^c	3	<u>ENG MGT 1100</u>	1
<u>MECH ENG 4479</u>	3	<u>ENG MGT 1210</u>	2
<u>MECH ENG 4842</u>	2	<u>MECH ENG 4480</u>	1
MECH ENG technical elective ^f	3	<u>MECH ENG 4761</u>	3
Technical elective ^g	3	MECH ENG 5000-level technical elective ^f	3
	17		13

Total Credits: 128

a

A grade of "C" or better is required in [CHEM 1305](#), [MATH 1214](#) (or [MATH 1211](#)), [MATH 1215](#), [MATH 2222](#), [MATH 3304](#), [PHYSICS 1135](#), [PHYSICS 2135](#), programming elective, [MET ENG 2110](#), [CIV ENG 2200](#), [CIV ENG 2210](#), [MECH ENG 2519](#), [MECH ENG 2360](#), and [MECH ENG 3411](#), both as prerequisite for follow-up courses in the curriculum and for graduation.

b

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

c

Gen. Ed. Elective must fulfill the Missouri S&T general education requirements applicable to the students catalog year.

d

This course must be selected from the following: [MATH 3108](#), [STAT 3113](#) or any 5000-level math or stat course

approved by the student's advisor.

e

Although taking the Fundamentals of Engineering (FE) Examination is not a requirement for graduation, it is highly advised that students take the FE exam because passing this exam demonstrates comprehensive engineering knowledge and your ability to solve engineering problems. It is also the first step to becoming a licensed professional engineer (PE). A licensed PE allows you to sign and seal engineering documents, a requirement for many complex projects.

f

Six hours of technical electives, subject to approval by the student's advisor, must be in the department of mechanical and aerospace engineering. At least three of these technical elective hours must be at the 5000 level. This elective may not include co-op, special problems, or research credits, such as 3002, 4000, or 4099. Honors students have special requirements for technical electives.

g

This elective must be a three-credit hour course, subject to approval by the student's advisor, from any of the following areas: math, statistics, science, engineering, or computer science. The course must be at the 3000 or higher level. The elective may not include co-op, special problems, or research credits, such as 3002, 4000, or 4099.

h

This elective consists of three credit hours, subject to approval by the student's advisor, and may be satisfied by any of the following: (1) A three credit hour course from any of the following areas: math, statistics, science, engineering, computer science, business, or IST. The course must be at the 3000 or higher level, (2) Any combination of three credit hours from co-op (3002), special problems (3000, 4000, or 5000), or research (4099).

Energy Conversion Emphasis Area for Mechanical Engineering

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

a. Two courses from the following list:		6
AERO ENG 5169	Introduction to Hypersonic Flow	3
AERO ENG 5535	Aerospace Propulsion Systems	3
MECH ENG 5527	Combustion Processes	3
or AERO ENG 5527	Combustion Processes	
MECH ENG 5533	Internal Combustion Engines	3
MECH ENG 5566	Solar Energy Technology	3
MECH ENG 5567	Heat Pump And Refrigeration Systems	3

<u>MECH ENG 5571</u>	Environmental Controls	3
<u>MECH ENG 5575</u>	Mechanical Systems For Environmental Control	3
b. One course from the following list:		3
<u>MECH ENG 5131</u>	Intermediate Thermofluid Mechanics	3
or <u>AERO ENG 5131</u>	Intermediate Thermofluid Mechanics	
<u>MECH ENG 5139</u>	Computational Fluid Dynamics	3
or <u>AERO ENG 5139</u>	Computational Fluid Dynamics	
<u>MECH ENG 5519</u>	Advanced Thermodynamics	3
or <u>AERO ENG 5519</u>	Advanced Thermodynamics	
<u>MECH ENG 5525</u>	Intermediate Heat Transfer	3
or <u>AERO ENG 5525</u>	Intermediate Heat Transfer	
c. One additional course from either list “a” or list “b”, or from the following list:		3
<u>ECON 4540</u>	Energy Economics	3
<u>ELEC ENG 5150</u>	Photovoltaic Systems Engineering	3
<u>ENV ENG 5660</u>	Introduction To Air Pollution	3
<u>NUC ENG 5257</u>	Introduction to Nuclear Thermal Hydraulics	3
Note: By using the breadth elective and technical electives to satisfy the above requirements, this emphasis area requires the same total number of credit hours as the BSME degree. A change of major form should be submitted to designate the energy conversion emphasis area.		
<h2>Manufacturing Processes Emphasis Area for Mechanical Engineering</h2>		
Students desiring to obtain a bachelor of science in mechanical engineering with an emphasis area in manufacturing processes must satisfy all requirements of the bachelor of science in mechanical engineering with the additional stipulation that four courses must be taken as follows:		
a. The following course:		3
<u>MECH ENG 3653</u>	Manufacturing	3
b. Three of the following courses:		3
<u>MECH ENG 3001</u>	Special Topics	3
<u>MECH ENG 5282</u>	Introduction to Composite Materials & Structures	3

MECH ENG 5449	Robotic Manipulators and Mechanisms	3
MECH ENG 5479	Machine Learning for Manufacturing Automation	3
MECH ENG 5653	Computer Numerical Control of Manufacturing Processes	3
MECH ENG 5655	Manufacturing Equipment Automation	3
MECH ENG 5656	Design For Manufacture	3
MECH ENG 5708	Rapid Product Design And Optimization	3
MECH ENG 5763	Computer Aided Design: Theory and Practice	3

c. The Math/Stat elective must be the following course: 3

[STAT 3113](#) Applied Engineering Statistics 3

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

Junior Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2210^a	3	Elective-Communications ^c	3
CIV ENG 2211	1	MECH ENG 3131	3
ELEC ENG 2800	3	MECH ENG 3411^a	3
MECH ENG 3313	3	MECH ENG 3525	3
MECH ENG 3521	3	MECH ENG 3653	3
STAT 3113	3	MECH ENG 4840	2
	16		17

Senior Year

First Semester	Credits	Second Semester	Credits
Elective Literature ^d	3	Electives-Hum or Soc Sci ^d	3
Manufacturing Technical Elective3		ENG MGT 1100	1
Manufacturing Technical Elective3		ENG MGT 1210	2
MECH ENG 3708	3	Manufacturing Technical Elective3	
MECH ENG 4479	3	MECH ENG 4480	1
MECH ENG 4842	2	MECH ENG 4761	3
	17		13

Total Credits: 63

a

A grade of "C" or better is required in [CHEM 1305](#), [MATH 1214](#) (or [MATH 1211](#)), [MATH 1215](#), [MATH 2222](#), [MATH 3304](#), [PHYSICS 1135](#), [PHYSICS 2135](#), programming elective, [MET ENG 2110](#), [CIV ENG 2200](#), [CIV ENG 2210](#), [MECH ENG 2519](#), [MECH ENG 2360](#) and [MECH ENG 3411](#), both as prerequisite for follow-up courses in the curriculum and for graduation.

b

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

c

This course must be selected from the following: [ENGLISH 1160](#), [ENGLISH 3560](#) or [SP&M S 1185](#), or the complete four course sequence in Advanced ROTC ([MIL ARMY 3250](#), [MIL ARMY 3500](#), [MIL ARMY 4250](#), and [MIL ARMY 4500](#)); or [MIL AIR 3110](#), [MIL AIR 3120](#), [MIL AIR 4110](#) and [MIL AIR 4120](#)).

d

All electives must be approved by the student's advisor. Humanity and social science electives must be at least 3 credit hours of lecture designation, and also meet requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog.

e

Although taking the Fundamentals of Engineering (FE) Examination is not a requirement for graduation, it is highly advised that students take the FE exam because passing this exam demonstrates comprehensive engineering knowledge and your ability to solve engineering problems. It is also the first step to becoming a licensed professional engineer (PE). A licensed PE allows you to sign and seal engineering documents, a requirement for many complex projects.

Mechanical Design and Analysis Emphasis Area

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

a. One design course from the following list:

3

[MECH ENG 5656](#) Design For Manufacture

3

[MECH ENG 5702](#) Synthesis Of Mechanisms

3

[MECH ENG 5704](#) Compliant Mechanism Design

3

[MECH ENG 5708](#) Rapid Product Design And Optimization

3

[MECH ENG 5709](#) Machine Design II

3

[MECH ENG 5715](#) Concurrent Engineering

3

[MECH ENG 5757](#) Integrated Product And Process Design

3

[MECH ENG 5760](#) Probabilistic Engineering Design

3

[MECH ENG 5761](#) Engineering Design Methodology

3

[MECH ENG 5763](#) Computer Aided Design: Theory and Practice

3

b. One analysis course from the following list:	3
<u>MECH ENG 5211</u> Introduction To Continuum Mechanics	3
<u>MECH ENG 5212</u> Introduction to Finite Element Analysis	3
<u>MECH ENG 5222</u> Introduction To Solid Mechanics	3
<u>MECH ENG 5234</u> Stability of Engineering Structures	3
<u>MECH ENG 5236</u> Fracture Mechanics	3
<u>MECH ENG 5238</u> Fatigue Analysis	3
<u>MECH ENG 5307</u> Vibrations I	3
<u>MECH ENG 5313</u> Intermediate Dynamics Of Mechanical And Aerospace Systems	3
<u>MECH ENG 5449</u> Robotic Manipulators and Mechanisms	3
<u>MECH ENG 5478</u> Mechatronics	3
c. Two additional courses from either of the previous lists.	6

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

Systems Integration Emphasis Area

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

The following requirements in the mechanical engineering curriculum are removed (16 credit hours):

Breadth elective	3
<u>ELEC ENG 2800</u> Electrical Circuits	3
Elective-Advanced Math/Stat	3
<u>ENG MGT 1100</u> Practical Concepts for Technical Managers	1
MECH ENG 5000-level technical elective	3
Technical elective	3

The following requirements are added (16 credit hours):

<u>ELEC ENG 2100</u> Circuits I	3
<u>ELEC ENG 2101</u> Circuit Analysis Laboratory I	1

<u>ELEC ENG 2120</u>	Circuits II	3
Systems Management elective. One of the following:		
<u>ENG MGT 3320</u>	Introduction to Project Management	3
<u>ENG MGT 4710</u>	Quality	3
<u>MECH ENG 5715</u>	Concurrent Engineering	3
<u>MECH ENG 5757</u>	Integrated Product And Process Design	3
<u>MECH ENG 5758</u>	Integrated Product Development	3
Systems Integration technical elective. One of the following:		
<u>MECH ENG 5307</u>	Vibrations I	3
<u>MECH ENG 5478</u>	Mechatronics	3
<u>MECH ENG 5481</u>	Mechanical And Aerospace Control Systems	3
<u>MECH ENG 5533</u>	Internal Combustion Engines	3
<u>MECH ENG 5571</u>	Environmental Controls	3
<u>MECH ENG 5575</u>	Mechanical Systems For Environmental Control	3
<u>MECH ENG 5656</u>	Design For Manufacture	3
<u>MECH ENG 5704</u>	Compliant Mechanism Design	3
<u>MECH ENG 5708</u>	Rapid Product Design And Optimization	3
<u>MECH ENG 5709</u>	Machine Design II	3
<u>MECH ENG 5715</u>	Concurrent Engineering	3
<u>MECH ENG 5757</u>	Integrated Product And Process Design	3
<u>MECH ENG 5760</u>	Probabilistic Engineering Design	3
<u>MECH ENG 5763</u>	Computer Aided Design: Theory and Practice	3
One of the following:		
<u>STAT 3113</u>	Applied Engineering Statistics	3
<u>STAT 3117</u>	Introduction To Probability And Statistics	3
All of the substitutions for this emphasis area appear in the junior and senior years. A suggested sequence for the junior and senior years is given below.		
Junior Year		
First Semester	Credits	Second Semester
<u>CIV ENG 2210</u> ^a	3	<u>ELEC ENG 2120</u>
		Credits
		3

CIV ENG 2211	1	MECH ENG 3131	3
ELEC ENG 2100	3	MECH ENG 3411 ^a	3
ELEC ENG 2101	1	MECH ENG 3525	3
MECH ENG 3313	3	MECH ENG 3708	3
MECH ENG 3521	3	MECH ENG 4840	2
STAT 3113 or 3117	3		
	17		17

Senior Year

First Semester	Credits	Second Semester	Credits
Elective - Communications ^c	3	Elective - Advanced Hum or Soc Sci ^d	3
ENG MGT 1210	2	Literature elective ^d	3
MECH ENG 4479	3	MECH ENG 4761	3
MECH ENG 4480	1	Systems Integration technical elective ^f	3
MECH ENG 4842	2	Systems Management elective ^g	3
MECH ENG technical elective ^e	3		
	14		15

Total Credits: 63

a

A grade of "C" or better is required in [CHEM 1305](#), [MATH 1214](#) (or [MATH 1211](#)), [MATH 1215](#), [MATH 2222](#), [MATH 3304](#), [PHYSICS 1135](#), [PHYSICS 2135](#), programming elective, [MET ENG 2110](#), [CIV ENG 2200](#), [CIV ENG 2210](#), [MECH ENG 2519](#), [MECH ENG 2360](#) and [MECH ENG 3411](#), both as prerequisite for follow-up courses in the curriculum and for graduation.

b

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

c

This course must be selected from the following: [ENGLISH 1160](#), [ENGLISH 3560](#) or [SP&M S 1185](#), or the complete four course sequence in Advanced ROTC ([MIL ARMY 3250](#), [MIL ARMY 3500](#), [MIL ARMY 4250](#), and [MIL ARMY 4500](#); or [MIL AIR 3110](#), [MIL AIR 3120](#), [MIL AIR 4110](#) and [MIL AIR 4120](#)).

d

All electives must be approved by the student's advisor.

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

e

The mechanical engineering technical elective is subject to approval by the student's advisor, and must be in the department of mechanical and aerospace engineering. This elective may not include co-op, special problems, or research credits, such as 3002, 4000, or 4099. Honors students have special requirements for technical electives.

f

The systems integration technical elective must be selected from the following list: [MECH ENG 5307](#),

[MECH ENG 5478](#), [MECH ENG 5481](#), [MECH ENG 5533](#), [MECH ENG 5571](#), [MECH ENG 5575](#), [MECH ENG 5656](#),
[MECH ENG 5704](#), [MECH ENG 5708](#), [MECH ENG 5709](#), [MECH ENG 5715](#), [MECH ENG 5757](#),
[MECH ENG 5760](#), [MECH ENG 5763](#).

g

The systems management elective must be selected from the following list: [MECH ENG 5715](#), [MECH ENG 5757](#),
[MECH ENG 5758](#), [ENG MGT 3320](#), [ENG MGT 4710](#).

h

Although taking the Fundamentals of Engineering (FE) Examination is not a requirement for graduation, it is highly advised that students take the FE exam because passing this exam demonstrates comprehensive engineering knowledge and your ability to solve engineering problems. It is also the first step to becoming a licensed professional engineer (PE). A licensed PE allows you to sign and seal engineering documents, a requirement for many complex projects.

Justification for
request

The following changes are made.

Footnote e: The MAE faculty have unanimously voted to remove the FE requirement for graduation. The new language encourages them to still consider taking the exam as it is beneficial for their career.

Footnotes g and h: The current language “or have a prerequisite that is part of the required mechanical engineering curriculum” causes confusion among our students. This has been deleted.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Hannah Johnson (hjh9x) (03/27/26 11:30 am): Alphabetized and listed in numerical order sections: Energy Conversion Emphasis Area, Mechanical Design and Analysis Emphasis Area, Systems Integration Emphasis Area, Plan of Study for the Bachelor of Science Mechanical Engineering, Plan of Study for Manufacturing Processes Emphasis Area, and the Plan of Study for Systems Integration Emphasis Area.

Program Change Request

Date Submitted: 03/06/26 11:51 am

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

Last approved: 12/24/25 9:35 am

Last edit: 03/10/26 8:37 am

Changes proposed by: Stephen Casey (caseysc)

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

Final Catalog FS2026-SP2027
Rationale for

Supporting

Effective Catalog FS2026-SP2027
Edition

Start Term Fall 2026

Program Type Bachelor of Science

CIM Prospectus

Academic Level Undergraduate

Program Code MI ENG-BS

Department Mining and Explosives Engineering

Discipline Mining Engineering

Offered by
Title

In Workflow

1. **RMINENG 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

Approval Path

1. 03/06/26 11:55 am
Kwame Awuah-Offei (kabp3): Approved for RMINENG Chair
2. 03/10/26 8:04 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/14/26 10:05 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post

History

1. Apr 28, 2014 by Kwame Awuah-Offei (kabp3)
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)
7. Jun 14, 2022 by Kwame Awuah-Offei (kabp3)
8. Oct 5, 2023 by Jennifer Pohlsander (jpnfd)
9. Jan 29, 2024 by Stephen Casey (caseysc)
10. Sep 20, 2024 by Stephen Casey (caseysc)
11. Jul 1, 2025 by Stephen Casey (caseysc)
12. Dec 24, 2025 by Crystal Wilson (wilsoncry)

Mining Engineering BS

CIP Code 14.2101 - Mining and Mineral Engineering.

Purpose

Intended Audience

Program-Specific
Admission

Program Requirements and Description

Bachelor of Science 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 the extraction of (critical) minerals to meet societal needs. 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 1912](#) 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. 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.

The Mining Engineering program must meet Missouri S&T general education requirements as stipulated in the catalog.

Freshman Year

First Semester	Credits	Second Semester	Credits
CHEM 1100	1	GEO ENG 1150	3
CHEM 1305	<u>4</u>	HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3
CHEM 1319	1	MATH 1215	4

<u>ENGLISH 1120</u>	3	<u>MECH ENG 1720</u>	3
<u>FR ENG 1100</u>	1	<u>PHYSICS 1135</u>	4
<u>MATH 1214</u> or <u>1211</u>	4		
CHEM 1310	4		
<u>MIN ENG 1912</u>	2		
	16		17
Sophomore Year			
First Semester	Credits	Second Semester	Credits
<u>CIV ENG 2200</u>	3	<u>MATH 3304</u>	3
General Education Elective ¹	3	<u>MECH ENG 2350</u>	2
<u>MATH 2222</u>	4	<u>MECH ENG 2527</u>	3
<u>MIN ENG 2925</u>	2	<u>MIN ENG 2412</u>	3
<u>MIN ENG 3912</u>	2	<u>PHYSICS 2135</u>	4
<u>MIN ENG 3913</u>	3		
	17		15
Junior Year			
First Semester	Credits	Second Semester	Credits
<u>CIV ENG 2210</u>	3	<u>ENGLISH 1160</u> , or <u>3560</u> , or <u>SPM S 1185</u>	3
<u>ECON 3512</u> ²	3	<u>MIN ENG 4512</u>	3
<u>GEOLOGY 3310</u>	3	<u>MIN ENG 5522</u>	3
<u>MIN ENG 5932</u>	3	<u>MIN ENG 5823</u>	3
<u>NUC ENG 3221</u> or <u>CIV ENG 3330</u>	3	<u>MIN ENG 5933</u>	3
<u>STAT 3113</u>	3		
	18		15
Senior Year			
First Semester	Credits	Second Semester	Credits
General Education Elective ¹	3	General Education Elective ¹	3
<u>MIN ENG 4096</u>	3	<u>MIN ENG 4097</u>	3
<u>MIN ENG 5113</u>	3	<u>MIN ENG 5742</u>	3
<u>MIN ENG 5612</u> or <u>EXP ENG 5612</u>	3	Technical Elective ^{3,4,5,6,7,8}	3
<u>MIN ENG 5912</u>	3	Technical Elective ^{3,4,5,6,7,8}	3
	15		15
Total Credits: 128			

1

General Education Elective must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

2

General Education Elective, Mining Engineering program requirement.

3

Explosives Engineering Emphasis: EXP ENG 5622 (Blasting Design and Technology) and MIN ENG 5823 (Rock Mechanics) or EXP ENG 5922 (Tunneling & Underground Construction Techniques) have to be taken as Technical

Electives.

4

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

5

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

6

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.

7

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.

8

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.

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

Senior Year		
ENG MGT 4330	Human Factors (or approved substitute course.)	3
MIN ENG 3002	Mine Rescue (or approved substitute course.)	3

Sustainable Development Emphasis

Senior Year		
ECON 4440	Environmental And Natural Resource Economics (or approved substitute course.)	3
POL SCI 3310	Public Policy Analysis (or approved substitute course.)	3

Quarrying Engineering Emphasis

Senior Year		
Choose two of the following which have to be taken as Technical Electives.		
<u>CIV ENG 3116</u>	Construction Materials, Properties And Testing	3
<u>MIN ENG 5212</u>	Aggregates and Quarrying	3
<u>MIN ENG 5412</u>	Aggregates Materials Sizing and Characterization	3

Explosives Engineering Emphasis

Senior Year		
Courses have to be taken as technical electives.		
<u>EXP ENG 5622</u>	Blasting Design And Technology	3
<u>MIN ENG 5823</u>	Rock Mechanics	3
or <u>EXP ENG 5922</u>	Tunneling & Underground Construction Techniques	

Coal Emphasis

Senior Year		
<u>MIN ENG 5322</u>	Coal Mining Methods	3
MIN ENG 4414	Mine Plant Management (or approved substitute course.)	2
<u>MIN ENG 5422</u>	<u>Coal Preparation</u>	<u>3</u>

Mining and the Environment Emphasis

Senior Year		
<u>GEO ENG 5233</u>	Risk Assessment In Environmental Studies (or approved substitute course.)	3
<u>GEO ENG 5235</u>	Environmental Geological Engineering (or approved substitute course.)	3

Justification for request

Changing to Chem 1305 since degree does not require Chem 1320

Attach Budget

System Approval Letter

MDHE Approval

Supporting [FS 2024 Course Change Requests.pdf](#)
Documents

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 1:32 pm): Alphabetized all courses listed.

Crystal Wilson (wilsoncry) (03/10/26 8:37 am): With department approval I removed Min Eng 4414 from the Coal Emphasis area as the course was last taught in 2004. I added Min Eng 5422.

Program Change Request

Date Submitted: 03/04/26 4:20 pm

Viewing: **MT ENG-BS : Metallurgical Engineering
BS**

Last approved: 12/24/25 9:35 am

Last edit: 03/27/26 10:20 am

Changes proposed by: David Lipke (lipked)

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

Final Catalog

FS2026-SP2027

In Workflow

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

Approval Path

1. 03/04/26 4:56 pm
Sridhar Seetharaman (ssgw8): Approved for RMATSENG Chair
2. 03/20/26 7:57 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/20/26 12:06 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson (hjh9x): Approved for Pending CCC

Rationale for
Investigation

Agenda post

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science

History

1. Oct 8, 2013 by Lahne Black (lahne)
2. Apr 28, 2014 by Lahne Black (lahne)
3. Aug 14, 2014 by Lahne Black (lahne)
4. Aug 20, 2014 by pantaleoa
5. Aug 20, 2014 by pantaleoa
6. Aug 20, 2014 by pantaleoa
7. Jul 21, 2015 by pantaleoa
8. Mar 7, 2016 by F. Scott Miller (smiller)
9. Mar 27, 2017 by F. Scott Miller (smiller)
10. Jun 28, 2017 by F. Scott Miller (smiller)
11. Mar 3, 2020 by ershenb
12. Sep 15, 2020 by Crystal Wilson (wilsoncry)
13. Apr 6, 2022 by F. Scott Miller (smiller)
14. Jun 14, 2024 by David Lipke (lipke)
15. Dec 20, 2024 by Jade McCain (jm558v)
16. Jul 1, 2025 by David Lipke (lipke)
17. Dec 24, 2025 by Crystal Wilson (wilsoncry)

Academic Level Undergraduate
Program Code MT ENG-BS
Department Materials Science & Engineering
Discipline Metallurgical Engineering

Offered by

Title

Metallurgical Engineering BS

CIP Code [14.2001](#) - [Metallurgical Engineering](#).

Purpose

Intended Audience

Program-Specific

Admission

Program Requirements and Description

Bachelor of Science Metallurgical Engineering

For the Bachelor of Science degree in Metallurgical Engineering a minimum of 128 credit hours is required. A cumulative grade point average of at least 2.0 is required for all courses applied toward the degree, as well as for all required courses in the major field of study.

Freshman Year

First Semester	Credits	Second Semester	Credits
CHEM 1310 ¹	4	CHEM 1320 ¹	3
CHEM 1319	1	MATH 1215 ¹	4

<u>ENGLISH 1120</u>	3	<u>MECH ENG 1720</u>	3
<u>FR ENG 1100</u>	1	<u>MET ENG 2110</u> ¹	3
<u>HISTORY 1200</u> , or <u>1300</u> , or <u>1310</u> , or <u>POL SCI 1200</u>	3	<u>PHYSICS 1135</u> ¹	4
<u>MATH 1214</u> or <u>1211</u> ¹	4		
	16		17
Sophomore Year			
First Semester	Credits	Second Semester	Credits
<u>CIV ENG 2200</u> ¹	3	<u>CIV ENG 2210</u> ¹	3
<u>MATH 2222</u>	4	<u>ENGLISH 1160</u>, or <u>3560</u>, or <u>SPM S 1185</u> ⁷	3
<u>MET ENG 2125</u> ¹	2	<u>MATH 3304</u>	<u>3</u>
<u>MET ENG 3130</u> ¹	3	<u>MET ENG 3420</u> or <u>MECH ENG 2653</u> ¹	3
<u>MET ENG 3230</u> ¹	3	<u>MET ENG 3425</u>	1
		<u>PHYSICS 2135</u>	4
		<u>Programming Elective</u> ²	<u>3</u>
	15		17
Junior Year			
First Semester	Credits	Second Semester	Credits
<u>ENGLISH 1160</u> , or <u>3560</u> , or <u>SPM S 1185</u> ⁸	<u>3</u>	<u>CER ENG 3410</u>	<u>3</u>
<u>General Education Elective</u> ³	<u>3</u>	<u>STAT 3113</u>	3
<u>General Education Elective</u> ²	3	<u>General Education Elective</u> ³	<u>3</u>
<u>Free Elective</u>	3	<u>General Education Elective</u> ³	<u>3</u>
<u>MET ENG 3120</u>	3	<u>MET ENG 3220</u>	3
<u>MET ENG 3125</u> ¹	2	<u>MET ENG 3225</u>	1
<u>MATH 3304</u>	3	<u>MET ENG 3320</u>	3
<u>Out of Department Technical Elective</u> ⁴	<u>3</u>		
<u>STAT 3113</u> or <u>3117</u>	<u>3</u>		
	17		16
Senior Year			
First Semester	Credits	Second Semester	Credits
<u>MET ENG 4096</u> ¹	3	<u>General Education Elective</u> ³	<u>3</u>
<u>MET ENG 4350</u>	3	<u>MET ENG 4097</u>	3
<u>MET ENG 4420</u>	3	<u>MET ENG 4637</u>	3
<u>Steel Elective</u> ⁶	<u>3</u>	<u>Met Technical Elective</u> ⁷	<u>3</u>
<u>General Education Elective</u> ²	3	<u>Met Technical Elective</u> ⁶	3
<u>Met Technical Elective</u> ⁷	<u>3</u>	<u>Out of Program Technical Elective</u> ⁵	<u>3</u>
	15		15
Total Credits: 128			

1

A grade of "C" or better is required in the following courses to satisfy prerequisite requirements for subsequent coursework and to meet graduation criteria: CHEM 1310, CHEM 1320, CIV ENG 2200, CIV ENG 2210,

MATH 1214, MATH 1215, MET ENG 2110, MET ENG 2125, MET ENG 3125, MET ENG 3130, MET ENG 3230, MET ENG 3420, or MECH ENG 2653, MET ENG 4096, PHYSICS 1135.

2

Both COMP SCI 1972 and COMP SCI 1982, or both COMP SCI 1973 and COMP SCI 1983.

3

Gen Ed electives must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

4

CHEM ENG 5320, CHEM 2210, CHEM 3310, CHEM 4810, ELEC ENG 2100 & ELEC ENG 2101, ELEC ENG 2800, GEOLOGY 2610, MATH 5603, MATH 5325, MECH ENG 5212, MECH ENG 5220, MECH ENG 5236, MECH ENG 5238, MECH ENG 5282, MIN ENG 2412, PHYSICS 2305, PHYSICS 2311, STAT 5346, STAT 5353.

5

Any approved course listed under Out of Department Technical Elective (see footnote 4) or any CER ENG, MS&E, or SEMI ENG course at 2000-level with pre-requisite or at 3000-level or higher.

6

Steelmaking (MET ENG 4450) or Steels And Their Treatment (MET ENG 4320).

7

Any other 3000-level or higher MET ENG course.

8

Students may replace SP&M S 1185 with the ROTC sequence of MIL ARMY 4250 and MIL ARMY 4500 or MIL AIR 4110 and MIL AIR 4120.

Justification for request

Replaces Free Elective with a Programming Elective (approved by MET faculty vote FEB 2026).
Re-orders several Gen Ed courses and electives to maintain under 18 credit hours each semester. Updates footnotes.

Attach Budget

System Approval

Letter

MDHE Approval

Supporting

Documents

Reviewer

Comments

Hannah Johnson (hjh9x) (03/05/26 11:43 am): Added a comment for the courses that were not found (MET ENG 2200, Programming elective, out of department technical elective, MET

ENG 3415, Met technical elective, and the out of program technical elective) and removed the course that was listed for those that was showing 'not found'. Alphabetized all semesters in the Plan of Study Grid.

Hannah Johnson (hjh9x) (03/05/26 12:11 pm): Added back the courses for MET ENG 2200 and MET ENG 3415, removed parenthesis from the electives I edited in the past comment.

Hannah Johnson (hjh9x) (03/12/26 8:55 am): Hyperlinked MATH1214, MET ENG 2200, PHYS 1135, COMP SCI 1972, COMP SCI 1982, COMP SCI 1973 and COMP SCI 1983 in footnotes 1 and 2.

Crystal Wilson (wilsoncry) (03/17/26 3:06 pm): Changed Met Eng 2200 back to Met Eng 3230. This course number change is an affecting change and may be submitted for fall 2027. Changed Met Eng 3415 back to Cer Eng 3410. The change for this is an affecting change on the CC and may be submitted for fall 2027. Changed Met Eng 2200 in footnote 1 back to Cer Eng 33410. Placed a period at the end of footnote 6 and 8.

Hannah Johnson (hjh9x) (03/27/26 10:20 am): Edited footnote 4 to replace the words 'or' listed with a commas per email from Dr. Lipke.

Program Change Request

Date Submitted: 03/19/26 8:51 am

Viewing: **PE ENG-BS : Petroleum Engineering BS**

Last approved: 12/24/25 9:35 am

Last edit: 03/27/26 10:04 am

Changes proposed by: Mingzhen Wei (weim)

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

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	PE ENG-BS
Department	Earth Sciences and Engineering
Discipline	Petroleum Engineering
Title	

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

Approval Path

1. 03/02/26 2:35 pm
Stephen Gao (sgao):
Approved for
RGEOENG Chair
2. 03/03/26 11:39 am
Hannah Johnson
(hjh9x): Rollback to
Initiator
3. 03/04/26 9:35 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair
4. 03/05/26 3:23 pm
Crystal Wilson
(wilsoncry):
Rollback to Initiator
5. 03/06/26 8:42 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair

6. 03/12/26 1:36 pm
Crystal Wilson
(wilsoncry):
Rollback to Initiator
7. 03/19/26 8:57 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair
8. 03/20/26 2:14 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
9. 03/20/26 4:21 pm
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
10. 03/30/26 3:57 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

History

1. Sep 21, 2015 by
Ralph Flori (reflori)
2. Jun 18, 2018 by
Shari Dunn-Norman
(caolila)
3. Jun 14, 2019 by
Sharon Lauck
(laucks)
4. Mar 3, 2020 by
ershenb
5. Jul 1, 2020 by
Sharon Lauck
(laucks)
6. Jun 10, 2021 by
Sharon Lauck
(laucks)

7. Oct 28, 2021 by Katherine Grote (grotekr)
8. May 2, 2022 by Mingzhen Wei (weim)
9. Sep 16, 2024 by Crystal Wilson (wilsoncry)
10. Mar 17, 2025 by Jade McCain (jm558v)
11. Jul 1, 2025 by Mingzhen Wei (weim)
12. Dec 24, 2025 by Crystal Wilson (wilsoncry)

Petroleum Engineering BS

CIP Code 14.2501 - Petroleum Engineering.

Program Requirements and Description

Bachelor of Science Petroleum Engineering

For the Bachelor of Science degree in Petroleum Engineering a minimum of ~~127~~ 129 credit hours is required. 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 Petroleum Engineering. The Petroleum Engineering program at Missouri S&T consists of a strong foundation in math, sciences and engineering fundamentals, plus strong content in the traditional Petroleum Engineering core areas of drilling, production and reservoir engineering. S&T Petroleum Engineering students are prepared to solve today's problems and tomorrow's. Students learn theory, have ample hands-on experiences in laboratories, and they learn many modern software packages used by the petroleum industry.

Freshman Year

First Semester	Credits	Second Semester	Credits
<u>FR ENG 1100</u>	1	<u>MATH 1215</u>	4
<u>CHEM 1310¹</u>	4	<u>PHYSICS 1135</u>	4

<u>CHEM 1319</u>	1	<u>GEO ENG 1150</u> or <u>GEOLOGY 1110</u>	3
<u>CHEM 1305</u>	<u>4</u>	<u>COMP SCI 1500</u>	3
<u>MATH 1214</u> or <u>1211</u> ¹	<u>4</u>	<u>PET ENG 2510</u>	<u>3</u>
<u>HISTORY 1200</u> , or <u>1300</u> , or <u>1310</u> , or <u>POL SCI 1200</u>	3	<u>PET ENG 1120</u>	<u>1</u>
<u>ENGLISH 1120</u>	3		
<u>PET ENG 1120</u>	<u>1</u>		
<u>CHEM 1100</u>	<u>1</u>		
	17		15
Sophomore Year			
First Semester	Credits	Second Semester	Credits
<u>MATH 2222</u>	4	<u>MATH 3304</u>	3
<u>PHYSICS 2135</u>	4	<u>MECH ENG 2350</u>	2
General Education Elective ²	<u>3</u>	<u>CIV ENG 2210</u>	3
<u>CIV ENG 2200</u>	3	<u>PET ENG 3520</u>	3
<u>PET ENG 3320</u>	3	General Education Elective ²	<u>3</u>
		<u>PET ENG 3330</u>	3
	17		17
Junior Year			
First Semester	Credits	Second Semester	Credits
<u>CIV ENG 3330</u>	3	<u>PET ENG 4410</u>	3
<u>PET ENG 4210</u>	3	<u>PET ENG 4631</u>	3
CS Programming Elective ⁴	<u>3</u>	<u>MECH ENG 2527</u>	3
<u>GEOLOGY 3310</u>	3	<u>ENGLISH 1160</u> , or <u>1600</u> , or <u>3560</u>	3
<u>GEOLOGY 3319</u>	1	General Education Elective ²	<u>3</u>
<u>GEOLOGY 5513</u>	3		
	16		15
Senior Year			
First Semester	Credits	Second Semester	Credits
<u>PET ENG 4520</u>	3	<u>PET ENG 4097</u>	3
<u>PET ENG 5801</u>	3	<u>GEO ENG 4115</u> , or <u>STAT 3113</u> , or <u>STAT 3117</u>	3
PET ENG Elective ³	<u>3</u>	General Education Elective ²	<u>3</u>
<u>PET ENG 4590</u>	3	<u>PET ENG 4531</u>	3
<u>PET ENG 4720</u>	3	<u>PET ENG 5050</u>	3
	15		15
Total Credits: 127			

1

MATH 1211 may be substituted for MATH 1214.

2

General Education Requirement. General education electives must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

3

Select Petroleum Engineering electives in accordance with interest and availability of courses. Courses include [PET ENG 4211](#), [PET ENG 4421](#), [PET ENG 4431](#), and [PET ENG 4611](#).

4

Selection can be [COMP SCI 1972](#) and [COMP SCI 1982](#), or [COMP SCI 2300](#), or be replaced by formal online program course credits.

~~5~~

~~Selection can be [COMP SCI 1972](#) and [COMP SCI 1982](#), or [COMP SCI 2300](#), or be replaced by formal online program course credits.~~

~~All Petroleum Engineering students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree, however, it is the first step to becoming a registered professional engineer. This requirement is part of Missouri S&T assessment process as described in Assessment Requirements found elsewhere in this catalog. Students must sign a release form giving the University access to their Fundamentals of Engineering Examination score.~~

The total number of credit hours required for a degree in Petroleum Engineering is [127](#). ~~129~~.

Petroleum Engineering students must earn the grade of “C” or better in all Petroleum Engineering courses to receive credit toward graduation.

Note: All Petroleum Engineering students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree, however, it is the first step to becoming a registered professional engineer. This requirement is part of Missouri S&T assessment process as described in Assessment Requirements found elsewhere in this catalog. Students must sign a release form giving the University access to their Fundamentals of Engineering Examination score.

Accelerated BS/MS Program Option for Petroleum Engineering Majors

Missouri S&T Petroleum Engineering undergraduate students may opt to apply for an accelerated BS/MS program where a student can earn both the BS and MS degrees in Petroleum Engineering faster than if pursuing the degrees separately. The degrees awarded will be a BS & MS (non-thesis or thesis) in Petroleum Engineering.

The benefits for undergraduate students admitted to the program are:

Undergraduate and graduate courses may be chosen with greater flexibility,

Up to nine hours of 5000-level or above Petroleum Engineering coursework may apply to both the BS and MS requirements,

The classes taken for shared BS/MS credit may be taken at the lower undergraduate tuition rate,

The GRE is not required for admission,

Other graduate courses can be taken any time after entering the program as a dual enrolled student,

Work on a thesis project may begin before the BS requirements are completed.

To be eligible for the accelerated BS/MS Petroleum Engineering program, a Petroleum Engineering undergraduate must be at or beyond the junior level standing with a minimum of 48 credit hours. They must have successfully completed the Chemistry and Math requirements and have completed 21 credit hours of Petroleum Engineering

courses at Missouri S&T with at least a 3.2 GPA in the Petroleum Engineering courses. To be admitted, the student must complete the program application and non-thesis MS students must have the recommendation of a Petroleum Engineering faculty member, while thesis MS students must have the recommendation of a Petroleum Engineering faculty member who agrees to serve as the graduate thesis advisor. All other MS degree requirements remain the same. The program may be combined with existing honors research, emphasis areas, and certificate options.

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

It is the student's responsibility to check on how dual-enrollment status and graduate coursework affects scholarships and other financial aid. As a graduate student, you **are not** eligible for Federal Pell Grants. You are still eligible for Federal Financial Aid. You may be eligible for fellowships and teaching/research assistantships. It is the International student's responsibility to check with international affairs during completion of an accelerated BS/MS to ensure immigration status will be maintained throughout the program.

Justification for
request

Replaced Chem 1310 with Chem 1305 per Chemistry Department request.

This is an update to reflect the combination of original PE2510 for Fluid Properties and PE3320 for Petrophysics, which reduces the total credit hours for the PE BS from 129 to 127.

The combination of PE2510 and PE3320 was into PE3320 and re-titled as Rock and Fluid Properties.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Hannah Johnson (hjh9x) (03/03/26 11:39 am): Rollback: Rolling back per department request. The credits listed in the notes under the study grid still list the total as 129 instead of 127.

Hannah Johnson (hjh9x) (03/04/26 10:52 am): Changed the total number of credits in the notes to 127: "The total number of credit hours required for a degree in Petroleum Engineering is 127"

Crystal Wilson (wilsoncry) (03/05/26 3:23 pm): Rollback: Rollback per department request to make updates. cw 3/5/2026

Crystal Wilson (wilsoncry) (03/12/26 1:36 pm): Rollback: Roll back per department request for corrections/updates.

Hannah Johnson (hjh9x) (03/27/26 10:04 am): Took the note out of footnote 4, and made it a note after the footnote section - the section about the Fundamentals of Engineering Examination. Hyper linked PET ENG 4611, 4211, 4431, and 4421 in footnote 3, and listed numerically.

Program Change Request

New Program Proposal

Date Submitted: 02/27/26 11:24 am

Viewing: **PROPOSED : Biochemistry BS**

Last edit: 03/19/26 11:39 am

Changes proposed by: Pablo Sobrado (pszq5)

Effective Catalog	FS2026-SP2027
Edition	
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	PROPOSED
Department	Chemistry
Discipline	Chemistry
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

Approval Path

1. 02/26/26 1:43 pm Chariklia Sotiriou-Leventis (cslevent): Approved for RCHEMIST Chair
2. 02/27/26 10:28 am Hannah Johnson (hjh9x): Rollback to Initiator
3. 02/27/26 11:33 am Chariklia Sotiriou-Leventis (cslevent): Approved for RCHEMIST Chair
4. 03/03/26 11:48 am Hannah Johnson (hjh9x): Approved for CCC Secretary
5. 03/20/26 9:57 am Katie Shannon (shannonk):

Approved for
 Sciences DSCC Chair
 6. 03/30/26 3:57 pm
 Hannah Johnson
 (hjh9x): Approved
 for Pending CCC
 Agenda post

Biochemistry BS

CIP Code 26.0202 - Biochemistry.

Program Requirements and Description

Bachelor of Science Biochemistry

A minimum of 120 credit hours is required for a Bachelor of Science degree in Biochemistry, 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.

General Education Electives must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

Freshman Year

First Semester	Credits	Second Semester	Credits
<u>CHEM 1100</u>	1	<u>BIO SCI 1213</u>	3
<u>CHEM 1110</u>	1	<u>BIO SCI 1219</u>	1
<u>CHEM 1310</u>	4	<u>CHEM 1320</u>	3
<u>CHEM 1319</u>	1	<u>CHEM 4010</u>	1
<u>ENGLISH 1120</u>	3	<u>ENGLISH 1160</u> or <u>SPM S 1185</u>	3
<u>MATH 1214</u> or <u>1210</u> and <u>1211</u>	4	<u>MATH 1215</u>	4
	14		15

Sophomore Year

First Semester	Credits	Second Semester	Credits
<u>BIO SCI 2213</u>	3	<u>CHEM 2220</u>	3
<u>BIO SCI 2219</u>	1	<u>CHEM 2229</u>	1
<u>CHEM 2210</u>	3	<u>CHEM 2510</u>	4
<u>CHEM 2219</u>	1	General Education Elective ¹	3
<u>COMP SCI 1973</u>	2	<u>PHYSICS 2145</u>	4
<u>COMP SCI 1983</u>	1		
<u>PHYSICS 1145</u>	4		

	15		15
Junior Year			
First Semester	Credits	Second Semester	Credits
STAT 3425	4	BIO SCI 2223	3
CHEM 4619	2	CHEM 4620	3
CHEM 4610	3	General Education Elective ¹	3
General Education Elective ¹	3	General Electives	6
General Elective	3		
	15		15
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 4099	1	CHEM 2410	3
CHEM 4630	3	CHEM 4650	3
General electives	9	BIO SCI 3313	3
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3	General Education Elective ¹	3
		General Electives	3
	16		15
Total Credits: 120			

1

Gen. Ed. Elective must fulfill the Missouri S&T general education requirements applicable to the students catalog year.

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: The degree has twenty-one (21) hours of general electives credit that may not include Math courses prerequisite to calculus. Not more than one (1) credit hour of [CHEM 4010](#) can be included for degree credit. Up to eight (8) credit hours may be taken of [CHEM 4099](#).

Justification for request

The B.S. in Biochemistry curriculum will provide students with an interdisciplinary scientific foundation and hands-on laboratory training across chemistry, biology, biotechnology, mathematics, statistics, and physics. The program is designed to prepare students to become leaders in biotechnology, chemical, and biomedical industries, or to continue into professional or graduate education. The proposed program consists primarily of existing courses from the Departments of Chemistry and Biological Sciences, as well as selected courses from the Departments of Mathematics and Statistics and Physics.

This program is highly sought after by students because of its interdisciplinary training, which prepares graduates for careers in chemistry, biochemistry, pharmacology, medicine, and related fields. In addition, the broad scientific expertise developed in this major is also applicable to

disciplines such as law and business. It is expected that this major will increase our undergraduate student enrollment and contribute to growth in bio-related areas across campus.

Attach Budget [Appendix C_Program Budgetxlsx.xlsx](#)

System Approval
Letter

MDHE Approval

Supporting [Appendix A_Letters of Support.pdf](#)
Documents [S&T BS Biochemistry Full Proposal.docx](#)
[Appendix B_Biochemistry_Curriculum.xlsx](#)

Reviewer

Comments

Hannah Johnson (hjh9x) (02/27/26 9:06 am): Added proposed in program code.

Hannah Johnson (hjh9x) (02/27/26 10:28 am): Rollback: Rolling back because a few of the course listed were not found. The form needs 3 more gen ed credits listed. (sent email with specifics)

Hannah Johnson (hjh9x) (02/27/26 11:48 am): Alphabetized the courses in the Plan of Study Grid.

Katie Shannon (shannonk) (03/19/26 11:28 am): I moved BIO SCI 3313 to spring senior year from fall junior year because Biology offers this course in the spring only. Switched 3 hours of General Elective with the course

Program Change Request

New Program Proposal

Date Submitted: 03/03/26 1:46 pm

Viewing: **PROPOSED : Literacy Coaching CT**

Last edit: 03/05/26 4:01 pm

Changes proposed by: Beth Kania-Gosche (bakm75)

Effective Catalog	FS2026-SP2027
Edition	
Start Term	Fall 2026
Program Type	Certificate
CIM Prospectus	
Academic Level	Graduate
Program Code	PROPOSED
Department	Education
Discipline	Education
Offered by	
Title	

In Workflow

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

Approval Path

1. 03/03/26 2:00 pm
Beth Kania-Gosche
(bakm75):
Approved for
REDUCATION Chair
2. 03/06/26 8:39 am
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
3. 03/06/26 9:10 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Literacy Coaching CT

CIP Code 13.1315 - Reading Teacher Education.

Purpose

Across the nation, reading scores are dropping to below pre-pandemic levels. The state of Missouri has an increasing emphasis on teaching reading, especially at the lower grade levels. The state has recognized a need for coaches to support teachers and schools in implementing research-based practices. Every early elementary student in Missouri who is below grade level in reading needs a literacy success plan. Literacy specialists assist in creating and implementing those plans.

DESE has revised the requirements for literacy specialist advanced certification. This graduate certificate is designed to meet these requirements.

Intended Audience

Distance (online) Students

Main Campus Students

Program-Specific

Admission

Current employment in a K-12 school or similar educational setting related to literacy

Initial teaching certificate

3.0 in undergraduate or previous education coursework

One recommendation from colleague or supervisor

Program Requirements and Description

Literacy Coaching Certificate

Literacy specialists or coaches work with students who are struggling with reading and writing. They serve a variety of roles in schools, including implementing interventions with students, working with teachers on reading instruction, creating literacy success plans, and examining literacy data to inform professional development. This graduate certificate does require an internship course where students apply their skills with children and teachers in school settings.

To receive the K-12 Literacy Specialist add on certification in Missouri, students must complete all coursework, pass the required assessment (Praxis exam 5302 Reading Specialist), and submit an application and transcript to the Missouri Department of Elementary and Secondary Education.

[EDUC 5500](#) Evidence-Based Practices for Literacy Instruction is a prerequisite for this graduate certificate.

The following courses are required.

EDUC 5565	Comprehensive Literacy Program Development	3
EDUC 6560	Teacher Development in Literacy Instruction	3
EDUC 6570	Literacy Assessments	3
EDUC 6581	Literacy Specialist Internship I	1
EDUC 6582	Literacy Specialist Internship II	1
EDUC 6583	Literacy Specialist Internship III	1

Justification for request

The Missouri State Board of Education is revising the literacy specialist certification requirements. The state has recently focused on research-based practices for teaching reading, and we anticipate there may be funding available for programs like this. This certificate will be stackable with the existing Teacher Leadership graduate certificate. We are currently working on the masters degree proposal that will use the courses in both of those certificates.

Attach Budget

System Approval

Letter

MDHE Approval

Supporting Documents [New Grad Cert - Literacy Coaching.pdf](#)

Reviewer

Comments

Hannah Johnson (hjh9x) (03/03/26 3:44 pm): Alphabetized the course list.

Hannah Johnson (hjh9x) (03/04/26 12:14 pm): Added proposed to the program code.

Hannah Johnson (hjh9x) (03/04/26 12:18 pm): Added heading in the Program requirements and description section.

Crystal Wilson (wilsoncry) (03/05/26 4:01 pm): Hperlinked EDUC 5500. Moved EDUC 6560 to numerical order. Added CT to title.

Program Change Request

Date Submitted: 03/18/26 5:27 pm

Viewing: **SYS ENG-CT : Systems Engineering CT**

Last approved: 06/13/19 9:59 am

Last edit: 03/30/26 2:26 pm

Changes proposed by: Cihan Dagli (dagli)

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

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Certificate
Academic Level	Graduate
Program Code	SYS ENG-CT
Department	Engineering Mgt & Sys Engr
Discipline	Systems Engineering
Title	

In Workflow

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

Approval Path

1. 03/18/26 5:34 pm
Amaury Lendasse (altmg): Approved for RENG MNGT Chair
2. 03/19/26 12:08 pm
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/20/26 7:33 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post

History

1. Jun 13, 2019 by
ershenb

Systems Engineering CT

CIP Code [14.2701 - Systems Engineering.](#)

Intended Audience

[Distance \(online\) Students](#)

[Main Campus Students](#)

Program Requirements and Description

Systems Engineering Graduate Certificate

The graduate certificate in systems engineering is designed to provide graduate engineers with the advanced knowledge and skills necessary for the conception and implementation of complex systems. The emphasis is on the processes by which complex systems are conceived, planned, designed, built, tested, and certified. The systems engineering experience can be applied to defense, space, aircraft, communications, navigation, sensor, computer software, computer hardware, transportation, and other aerospace and commercial activities.

[SYS ENG 5101](#) System Engineering and Analysis

[SYS ENG 6102](#) Information Based Design

[SYS ENG 6103](#) ~~Systems Life Cycle Costing~~

[SYS ENG 6104](#) Systems Architecting

[SYS ENG 6542](#) [Model Based Systems Engineering](#)

Upon successful completion of the four courses as described above, students will be awarded certification. The student must complete the four courses with a grade of "B" or better in each course. Students may apply to the M.S. program with the completion of the certificate.

Justification for
request

Department wants to replace SysEng 6103 Systems Life Cycle Costing in the certificate which is one of the six core courses Systems Engineering MS program with another SysEng MS core SysEng 6542 Model based Systems Engineering for this certificate. This will allow our certificate students to learn Model Based Systems Engineering MBSE earlier in their Systems Graduate program and start their Digital Engineering CT as a second certificate earlier in their master's degree. This will be in line with recent changes that are taking place in system engineering

practice due to digitalization.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting Documents [SystemsEngineeringRevisedGraduateCertificateProposal.pdf](#)
[ProgramChange SystemsEngineeringCertificate \(2\).docx](#)

Reviewer

Comments

Hannah Johnson (hjh9x) (03/19/26 11:03 am): I indented course SYS ENG 6542 to be in line with the other listed courses. Per email from Dr. Cihan Dagli I removed duplicate documents from the attached budget section, the system approval letter section, and the MDHE approval section.

Experimental Change Request

New Proposal

Date Submitted: 01/29/26 2:09 pm

Viewing: **ARCH ENG 5001.018: Indoor**

Environmental Quality

Last edit: 03/30/26 2:38 pm

Changes proposed by: Stuart Baur (baur)

Requested Effective Date	Fall 2026
Department	Civil Engineering (RCIVILEN)
Discipline	Architectural Engineering (ARCH ENG)
Course Number	5001
Topic ID	018
Experimental Title	

In Workflow

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

Approval Path

1. 03/06/26 5:48 am
Subhas Venayagamoorthy (skv7d8): Approved for RCIVILEN Chair
2. 03/09/26 1:40 pm
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/14/26 10:06 am
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post

Indoor Environmental Quality

Experimental Indoor Envir. Quality

Abbreviated Course

Title

Co-Listed Course

Instructors

Nicole Annis

Experimental

Catalog Description

This course introduces the engineering principles that govern indoor environmental quality, with a focus on thermal comfort, ventilation, airflow, and building system interactions. Students learn to analyze heat transfer, apply comfort indices such as PMV/PPD, and evaluate how envelope and HVAC design influence occupant experience and energy performance. Through applied calculations and case based exploration, the course builds a technical foundation for high performance building design.

Prerequisite(s)

Civ Eng 3330.

Corequisite(s)

Field Trip

Statement

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Grading Basis Graded

Repeatable No

Justification for experimental

course:

New course that will add to the certificate degree in Building Systems Engineering

Reviewer

Comments

Hannah Johnson (hjh9x) (03/06/26 9:07 am): Placed a period at the end of the prereq.
Selected grading for grading basis.

Hannah Johnson (hjh9x) (03/09/26 12:00 pm): Changed prereq. from CE to Civ Eng.

Hannah Johnson (hjh9x) (03/30/26 2:38 pm): Changed TBD to .018 in the Topic ID.

Experimental Change Request

New Proposal

Date Submitted: 03/04/26 10:00 am

Viewing: **BUS 5001.017: Marketing Strategies for Leaders**

Last edit: 03/05/26 3:38 pm

Changes proposed by: Cecil Eng Huang Chua (cecq8z)

Requested Effective Date	Fall 2026
Department	Jaggi School of Business (RBUS&IT)
Discipline	Business (BUS)
Course Number	5001
Topic ID	017
Experimental Title	

In Workflow

1. RBUS&IT Chair
2. CCC Secretary
3. Social Sciences DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. CAT entry
8. Registrar

Approval Path

1. 03/04/26 9:59 am
Cassie Elrod (cassa):
Rollback to Initiator
2. 03/04/26 10:01 am
Cassie Elrod (cassa):
Approved for
RBUS&IT Chair
3. 03/04/26 4:26 pm
Hannah Johnson
(hjh9x): Approved
for CCC Secretary
4. 03/04/26 4:28 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
5. 03/30/26 3:55 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC

Marketing Strategies for Leaders

Experimental MKT for LDR

Abbreviated Course

Title

Co-Listed Course

Instructors

Sarah Stanley

Experimental

Catalog Description

This course blends strategic tactics with practical marketing approaches, empowering an understanding of how marketing decisions shape organizational and departmental success. Beginning with essential concepts, such as identifying customer needs, segmenting and targeting markets, building strong brands, and creating integrated marketing strategies, students then tailor their learning by choosing topics that align with their unique career aspirations. Whether focusing on entrepreneurial innovation or corporate best practices, the course emphasizes leveraging data-driven insights to achieve sustainable growth and competitive advantage. With its flexible structure, this course delivers a personalized and highly relevant educational experience for every future business leader.

Prerequisite(s)

Corequisite(s)

Field Trip

Statement

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Grading Basis Graded

Repeatable No

Justification for
experimental
course:

Asynchronous course developed for the offering of an asynchronous MBA degree

Reviewer

Comments

Cassie Elrod (cassa) (03/04/26 9:59 am): Rollback: Change to BUS

Hannah Johnson (hjh9x) (03/04/26 4:25 pm): Removed MKT from the course number and added grading basis as graded. Added spaces in the experimental abbreviated course title "MKT for LDR". Removed N/A from prereq and coreq, and 'none' from the field trip statement.

Hannah Johnson (hjh9x) (03/05/26 3:38 pm): I added the topic ID as .017.

Experimental Change Request

New Proposal

Date Submitted: 03/15/26 4:59 pm

Viewing: **GERMAN 3001.002: Advanced**

German Literature

Last edit: 03/30/26 2:40 pm

Changes proposed by: Irina Ivliyeva (ivliyeva)

Requested Effective Date	Spring 2027
Department	Arts, Languages & Philosophy (RPHILOSO)
Discipline	German (GERMAN)
Course Number	3001
Topic ID	002
Experimental Title	

In Workflow

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

Approval Path

1. 03/15/26 5:09 pm
Irina Ivliyeva (ivliyeva): Approved for RPHILOSO Chair
2. 03/16/26 2:31 pm
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/20/26 9:48 am
Alejandra Sobrado (asgx4): Approved for Arts & Humanities DSCC Chair
4. 03/30/26 3:56 pm
Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post

Advanced German Literature

Experimental Adv German Literature

Abbreviated Course

Title

Co-Listed Course

Instructors

Gerald Cohen

Experimental

Catalog Description

Readings of selected major works in German literature, with emphasis on developing intermediate to advanced language proficiency and cultural competence in the target language.

Prerequisite(s)

German 1180.

Corequisite(s)

Field Trip

Statement

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Grading Basis Graded

Repeatable No

Justification for

experimental

course:

Expand the number of offerings at the 3XXX-level level to diversify German curriculum, to support German Minor program and to address students' needs.

Reviewer

Comments

Hannah Johnson (hjh9x) (03/16/26 2:30 pm): Selected graded for grading basis.

Hannah Johnson (hjh9x) (03/30/26 2:40 pm): Assigned 002 to the topic ID.

Experimental Change Request

New Proposal

Date Submitted: 03/18/26 11:13 am

Viewing: **MECH ENG 6001.010: Ballistic Theory**

Last edit: 03/30/26 2:43 pm

Changes proposed by: Nishant Kumar (nkwtb)

Requested Effective Date Fall 2026

Department Mechanical & Aerospace Engineering
(RMECHENG)

Discipline Mechanical Engineering (MECH ENG)

Course Number 6001

Topic ID 010

Experimental Title

In Workflow

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

Approval Path

1. 03/18/26 11:16 am
David Bayless
(djbkqf): Approved
for RMECHENG
Chair
2. 03/18/26 11:54 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 03/20/26 7:33 am
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson
(hjh9x): Approved
for Pending CCC
Agenda post

Ballistic Theory

Experimental Ballistic Theory

Abbreviated Course

Title

Co-Listed Course

Instructors

Dr. Phillip Mulligan

Experimental

Catalog Description

Investigation of internal, external, and terminal ballistics with emphasis on analytical modeling, instrumentation, experimental validation, and safety. Students will design, analyze, and test a constrained launch system and demonstrate predictive accuracy in a timed final.

Prerequisite(s)

Graduate standing.

Corequisite(s)

Field Trip
Statement

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Grading Basis Graded

Repeatable No

Justification for
experimental
course:

This course will help our graduate students who are involved with research in the area of "Ballistic Systems".

Reviewer

Comments

Crystal Wilson (wilsoncry) (03/18/26 11:54 am): Placed period at the end of the pre-req. Selected graded for grading basis.

Hannah Johnson (hjh9x) (03/30/26 2:43 pm): Assigned 010 to topic ID.

Experimental Change Request

New Proposal

Date Submitted: 03/24/26 12:41 pm

Viewing: **PHILOS 3001.011: Ethics of Artificial Intelligence**

Last edit: 03/30/26 2:47 pm

Changes proposed by: Irina Ivliyeva (ivliyeva)

Requested Effective Date	Spring 2027
Department	Arts, Languages & Philosophy (RPHILOS)
Discipline	Philosophy (PHILOS)
Course Number	3001
Topic ID	011
Experimental Title	

In Workflow

1. RPHILOS Chair
2. CCC Secretary
3. Arts & Humanities DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. CAT entry
8. Registrar

Approval Path

1. 03/24/26 12:43 pm
Irina Ivliyeva (ivliyeva): Approved for RPHILOS Chair
2. 03/25/26 2:54 pm
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/26/26 10:23 am
Alejandra Sobrado (asgx4): Approved for Arts & Humanities DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post

Ethics of Artificial Intelligence

Experimental Ethics of AI

Abbreviated Course

Title

Co-Listed Course

Instructors

Shane Epting; Michael Peterson

Experimental

Catalog Description

This course examines ethical issues associated with artificial intelligence and its applications through established frameworks in moral philosophy. Emphasis is placed on case-based analysis of topics such as algorithmic bias, automated decision-making, workforce automation, responsibility and accountability, data privacy, security, and environmental impacts. The course integrates philosophical analysis with real-world case studies and debates to evaluate the societal implications of emerging AI-focused technologies.

Prerequisite(s)

Sophomore standing or above.

Corequisite(s)

Field Trip

Statement

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Grading Basis Graded

Repeatable No

Justification for
experimental

course:

Expand ethics offerings at 3XXX level. The course serves as a ethics- focused general education offering accessible to students from all majors.

Rapidly evolving technologies present significant ethical challenges across socio-cultural and economic domains. These issues will impact S&T students, especially those who will be directly engaged with creating, developing, and innovating within AI-impacted industries and social contexts. This course prepares students not only to leverage but also to critically assess their implications and shape their ethical outcomes.

Reviewer

Comments

Hannah Johnson (hjh9x) (03/24/26 1:32 pm): Edited the word ethical and ethics in the justification and description to have no spaces in between each letter. Selected graded for grading basis.

Hannah Johnson (hjh9x) (03/30/26 2:47 pm): Assigned 011 as topic ID.

Experimental Change Request

New Proposal

Date Submitted: 03/02/26 5:19 pm

Viewing: **PHYSICS 4001.005: Computational Astrophysics**

Last edit: 03/30/26 2:45 pm

Changes proposed by: Thomas Vojta (vojtat)

Requested Effective Date	Spring 2027
Department	Physics (RPHYSICS)
Discipline	Physics (PHYSICS)
Course Number	4001
Topic ID	005
Experimental Title	

In Workflow

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

Approval Path

1. 03/02/26 5:20 pm
Thomas Vojta (vojtat): Approved for RPHYSICS Chair
2. 03/03/26 11:11 am
Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 03/19/26 11:23 am
Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 03/30/26 3:57 pm
Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post

Experimental Comp Astrophysics

Abbreviated Course

Title

Co-Listed Course

Instructors

Dr. Xiaojie Wang

Experimental

Catalog Description

An introduction to computational and statistical methods for solving problems in modern astrophysics. Topics include numerical methods, statistical inference, big-data techniques, and high-energy astrophysical data analysis.

Prerequisite(s)

Physics 2305, Comp Sci 1500 or equivalent programming experience.

Corequisite(s)

Field Trip

Statement

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Grading Basis Graded

Repeatable No

Justification for
experimental
course:

Computational astrophysics has become a core skill in modern astronomical research, yet Missouri S&T currently lacks a dedicated course that bridges astrophysical theory with numerical, statistical, and big-data techniques. This course will complement existing offerings such as Physics 4553 (Astrophysics) and Physics 5403 (Computational Physics) by providing

domain-specific training relevant to contemporary research areas, including high-energy gamma-ray astronomy and large-scale astronomical surveys.

Students will gain essential exposure to statistical methods that are broadly applicable across scientific disciplines, while also building a stronger connection between coursework and active research experience. Overall, this course will strengthen the preparation and competitiveness of Missouri S&T students pursuing graduate study and careers in astrophysics, data science, and scientific computing.

Reviewer

Comments

Hannah Johnson (hjh9x) (03/03/26 11:10 am): Added a period after the prerequisites and abbreviated Comp Sci. Answered graded for grading basis.

Hannah Johnson (hjh9x) (03/30/26 2:45 pm): Assigned 005 to Topic ID

2025-2026 CCC Calendar



CCC Meetings are from 8:15am – 9:30am in Fulton Hall 120 (*January 2026- May 2026*)

CCC INFORMATION	Department submission to Registrar <i>Fridays</i>	DSCC submission to Registrar <i>Fridays</i>	CCC Meeting <i>Tuesdays</i>	Faculty Senate Meeting <i>Thursdays</i>
EC forms for Fall 2025 & Affecting CC forms for Summer 2026 & Spring 2026	July 11, 2025	July 25, 2025	August 12, 2025	September 18, 2025
Non-affecting CC forms for Summer 2026 & Spring 2026	August 15, 2025	August 29, 2025	September 16, 2025	October 16, 2025
	September 19, 2025	October 3, 2025	October 21, 2025	November 20, 2025
Affecting CC forms for Fall 2026	October 17, 2025	October 31, 2025	November 18, 2025	December 18, 2025
EC forms for Spring 2026	December 5, 2025	December 19, 2025	January 13, 2026	February 12, 2026
	January 16, 2026	January 30, 2026	February 17, 2026	March 19, 2026
	February 13, 2026	February 27, 2026	March 17, 2026	April 16, 2026
DC forms for Fall 2026	March 6, 2026	March 20, 2026	April 14, 2026	May 14, 2026
EC forms for Summer 2026 & non-affecting CC forms for Fall 2026	April 3, 2026	April 17, 2026	May 5, 2026	June 18, 2026
EC forms for Fall 2026 & Affecting CC forms for Summer 2027 & Spring 2027	July 10, 2026	July 24, 2026	August 11, 2026	TBD

Official dates and location for Spring 2026 CCC meetings will be determined at a later date.

2026-2027 CCC Calendar



CCC Meetings are from 8:15am – 9:30am in Fulton Hall 120 (*August 2026- December 2026*)

CCC INFORMATION	Department submission to Registrar <i>Fridays</i>	DSCC submission to Registrar <i>Fridays</i>	CCC Meeting <i>Tuesdays</i>	Faculty Senate Meeting <i>Thursdays</i>
EC forms for Fall 2026 & Affecting CC forms for Summer 2027 & Spring 2027	July 10, 2026	July 24, 2026	August 11, 2026	TBD
Non-affecting CC forms for Summer 2027 & Spring 2027	TBD	TBD	TBD	TBD
	TBD	TBD	TBD	TBD
Affecting CC forms for Fall 2027	TBD	TBD	TBD	TBD
EC forms for Spring 2027	TBD	TBD	TBD	TBD
	TBD	TBD	TBD	TBD
	TBD	TBD	TBD	TBD
DC forms for Fall 2027	TBD	TBD	TBD	TBD
EC forms for Summer 2027 & non-affecting CC forms for Fall 2027	TBD	TBD	TBD	TBD
EC forms for Fall 2027	TBD	TBD	TBD	TBD

Official dates and location for Spring 2027 CCC meetings will be determined at a later date.