Minutes of the Campus Curricula Committee Meeting

April 14, 2026
8:15 am, Fulton Hall 120
(For Faculty Senate Meeting of May 14, 2026)

Attendees: Cecil Eng Huang Chua, Katie Shannon, Michael Davis, Theresa Swift, Cihan Dagli, Kyle Perry, Alejandra Sobrado, Crystal Wilson, and Hannah Johnson.

The following curriculum forms were discussed and approved:

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 Geoprofessionals
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 I~~
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

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

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

The meeting adjourned at 8:54 am.

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Dr. Cecil Eng Huang Chua, Chair
Missouri S&T Campus Curricula Committee

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

for Pending CCC Agenda post
5. 04/15/26 3:05 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive No

Communication Emphasized No

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: 04/14/26 4:16 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

5. 04/15/26 3:06 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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	Satisfactory/Unsatisfactory
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

Crystal Wilson (wilsoncry) (04/14/26 4:16 pm): Added grading basis as Satisfactory/ Unsatisfactory per department request.

Key: 10377

Preview Bridge

Course Change Request

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

Viewing: CER ENG 2315 : Ceramic Materials Laboratory I ~~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 ~~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

5. 04/15/26 3:06 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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	1 ~~2~~
Lecture	1

Total: 2

Required for Majors Yes ~~No~~

Elective for Majors No

Communication No

Intensive

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

5. 04/15/26 3:06 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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	1 ~~2~~
Lecture	1

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 4:20 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: 04/14/26 4:17 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
5. 04/15/26 3:06 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive No

Communication Emphasized No

Grading Basis Satisfactory/Unsatisfactory

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

Crystal Wilson (wilsoncry) (04/14/26 4:17 pm): Added grading basis as Satisfactory/ Unsatisfactory per department request.

Key: 10378

Preview Bridge

Course Change Request

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

Viewing: CER ENG 3315 : Ceramic Processing Laboratory ~~Lab I~~

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 I~~
Abbreviated Course Title	Cer Processing 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 7:14 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
5. 04/15/26 3:06 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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	1 ~~2~~
Lecture	1

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 4:20 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
5. 04/15/26 3:06 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Yes

Emphasized

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

Requested Effective Spring 2027

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

Date

Department Materials Science & Engineering (RMATSENG)

Discipline Ceramic Engineering (CER ENG)

Course Number 4096

Title

Materials Senior Design I

Abbreviated Course Title Matls Senior Design I

Co-Listed Course MET ENG 4096 Department

Materials Science & Engineering (RMATSENG)

SEMI ENG 4096 Department

Materials Science & Engineering (RMATSENG)

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

5. 04/15/26 3:06 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

History

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

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	2 ~~3~~
Laboratory	1

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)

SEMI ENG 4097 Department

Materials Science & Engineering (RMATSENG)

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

5. 04/15/26 3:06 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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	2 ~~3~~
Lecture	1

Total: 3

Required for Majors Yes

Elective for Majors	No
Communication Intensive	No
Communication Emphasized	Yes
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

5. 04/15/26 3:07 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:28 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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

Credit Type	Credit Hours
Laboratory	1

Total: 3

Required for Majors: Yes

Elective for Majors: No

Communication Intensive: No

Communication Emphasized: No

Grading Basis: Graded

Repeatable: No

Justification

The Cer Eng curriculum will requite 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
8. 04/15/26 3:07 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
9. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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: No

Communication Emphasized: No

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

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	5420 ~~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

5. 04/15/26 3:07 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive No

Communication Emphasized	No
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

Co-Listed Course

Catalog Description

(hjh9x): Approved for Pending CCC Agenda post
5. 04/15/26 3:07 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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

Title
Fundamentals of Transport in Chemical and Biochemical Engineering

Abbreviated Course Title Transport Phenomena

Co-Listed Course

Catalog Description

(hjh9x): Approved for Pending CCC Agenda post
5. 04/15/26 3:07 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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)

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 Intensive: No

Communication Emphasized: No

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

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

(hjh9x): Approved for Pending CCC Agenda post
5. 04/15/26 3:07 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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)

Credit Hours

Credit Type	Credit Hours
Laboratory	1
Lecture	2

Total: 3

Required for Majors: Yes

Elective for Majors: No

Communication Intensive: No

Communication Emphasized: No

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

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

Agenda post
5. 04/15/26 3:07 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

History

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

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

Agenda post

5. 04/15/26 3:07 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive: No

Communication Emphasized: No

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

Agenda post

5. 04/15/26 3:08 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive	No
Communication Emphasized	No
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
7. 04/15/26 3:08 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive	No
Communication Emphasized	No
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
7. 04/15/26 3:08 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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: 04/14/26 4:13 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
7. 04/15/26 3:08 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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.

Crystal Wilson (wilsoncry) (04/14/26 4:13 pm): Added a period at the end of the pre-req.

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
7. 04/15/26 3:08 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive	No
Communication Emphasized	No
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
7. 04/15/26 3:08 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive	No
Communication Emphasized	No
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
9. 04/15/26 3:08 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
10. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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
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 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
9. 04/15/26 3:12 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
10. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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
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 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.

Key: 4765

Preview Bridge

Course Change Request

New Course Proposal

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

Viewing: **EDUC 6581 : Literacy Specialist Internship I**

Last edit: 04/15/26 12:19 pm

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
7. 04/15/26 3:12 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive	No
Communication Emphasized	No
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.

Crystal Wilson (wilsoncry) (04/15/26 12:19 pm): This has been submitted as a 1 hour lecture course. Department says faculty will provide content to students on developing their literacy intervention plans, creating supporting literacy environments, and completing assessment, while students also complete internship hours in a school setting.

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: 04/15/26 12:26 pm

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

for Pending CCC Agenda post
5. 04/15/26 3:12 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

This course is a continuation of Literacy Specialist Internship I. This course may be taken concurrently with EDUC 6581 and EDUC 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 Intensive	No
Communication Emphasized	No
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: 04/15/26 12:25 pm

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

for Pending CCC Agenda post
5. 04/15/26 3:13 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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.

Crystal Wilson (wilsoncry) (04/15/26 12:25 pm): Removed EDUC 6583 Literacy Specialist Internship III (1 credit hour) from the catalog description as it is not needed because this is the course for which the CC is for.

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 (RENGLISH)
Discipline	English (ENGLISH)
Course Number	6001
Title	Special Topics
Abbreviated Course Title	Special Topics
Co-Listed Course	

Catalog Description

In Workflow

1. **RENGLISH Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **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 RENGLISH 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

for Pending CCC Agenda post
5. 04/15/26 3:13 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive	No
Communication Emphasized	No
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

for Pending CCC Agenda post
5. 04/15/26 3:13 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:28 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive No

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	

Catalog Description

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
7. 04/15/26 3:13 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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
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

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 Geoprofessionals

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 Geoprofessionals
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
7. 04/15/26 3:13 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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	2 ~~3~~
Laboratory	1

Total: 3

Required for Majors: No

Elective for Majors: Yes

Communication Intensive: No

Communication Emphasized: No

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
7. 04/15/26 3:13 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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	2 ~~3~~

Credit Type	Credit Hours
Laboratory	1

Total: 3

Required for Majors: No

Elective for Majors: Yes

Communication Intensive: No

Communication Emphasized: No

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 (RGEOSENG)
Discipline	Geology (GEOLOGY)
Course Number	2610

Title

Mineralogy And Crystallography

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 1:55 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
Co-Listed Course	

Catalog Description

for Pending CCC Agenda post
5. 04/15/26 3:13 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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\Petrolgy
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

Catalog Description

for Pending CCC Agenda post
5. 04/15/26 3:14 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 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. 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

Title
Introduction To Geochemistry

Abbreviated Course Title Intro To Geochemistry

Co-Listed Course

Catalog Description

for Pending CCC Agenda post
5. 04/15/26 3:14 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 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 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
5. 04/15/26 3:14 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive: No

Communication Emphasized: No

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
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

5. 04/15/26 3:14 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive No

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

Co-Listed Course

Catalog Description

for Pending CCC Agenda post

5. 04/15/26 3:14 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:25 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive No

Communication Emphasized No

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

PET ENG 4531 : Natural Gas Engineering

Requested Effective Date	Fall 2026
Department	Earth Sciences and Engineering (RGEOSENG)
Discipline	Petroleum Engineering (PET ENG)
Course Number	3320
Title	Rock and Fluid Properties ~~Petrophysics~~
Abbreviated Course Title	Rock and Fluid Properties ~~Petrophysics~~
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. 03/02/26 2:20 pm Stephen Gao (sgao): Approved for RGEOSENG 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 RGEOSENG 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 RGEOSENG 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
9. 04/15/26 3:14 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
10. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 (RGEOSENG)
Discipline	Petroleum Engineering (PET ENG)
Course Number	3330

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 8:43 am Stephen Gao (sgao): Approved for RGEOSENG 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 RGEOSENG Chair
4. 03/11/26 12:11 pm Crystal Wilson (wilsoncry): Approved for CCC Secretary

Title
Formation Evaluation
Abbreviated Course Title
Formation Evaluation

Co-Listed Course

Catalog Description

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
7. 04/15/26 3:14 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:25 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 ~~2111;~~ 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: No

Communication Emphasized: No

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.

Key: 1045

Preview Bridge

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

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	

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):

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
8. 04/15/26 3:15 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
9. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

History

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

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

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: 04/15/26 9:52 am

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 (RGEOSENG)
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. **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. 03/06/26 8:35 am Stephen Gao (sgao): Approved for RGEOSENG 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 RGEOSENG 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 RGEOSENG 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
9. 04/15/26 3:15 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
10. 04/15/26 3:28 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 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 Intensive: No

Communication Emphasized: No

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.

Crystal Wilson (wilsoncry) (04/15/26 9:52 am): Per department approval and CCC approval, I am removing PET ENG 2510 from the pre-req because the course is being inactivated. According to the department, prior students should have taken PET ENG 2510 and PET ENG 3320 together so the removal of PET ENG 2510 should not affect students.

Key: 1241

Preview Bridge

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 (RGEOSENG)
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. **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 9:39 am Stephen Gao (sgao): Approved for RGEOSENG 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

Agenda post

5. 04/15/26 3:15 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:25 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 Intensive	No
Communication Emphasized	No
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
5. 04/15/26 3:04 pm Hannah Johnson

(hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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
IS&T 5520	Data Science and Machine Learning with Python
Elective courses (choose two):	
BUS 5920	Artificial Intelligence: Law, Governance, and Policy
ERP 6220	Data Modeling & Visualization Prototyping for Enterprise Decision Dashboard
IS&T 5420	Business Analytics and Data Science
IS&T 5535	Machine Learning Algorithms and Applications
IS&T 6443	Information Retrieval and Analysis
IS&T 6723	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
5. 04/15/26 3:04 pm Hannah Johnson

(hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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:

IS&T 1750	Introduction to Management Information Systems	3

IS&T 3420	Introduction to Data Science and Management	3
IS&T 3423	Database Management	3
Two courses from the following list:		**6**
BUS 5730	Machine Learning and Artificial Intelligence for Business	
IS&T 5420	Business Analytics and Data Science	
IS&T 5450	Introduction to Information Visualization	
IS&T 5520	Data Science and Machine Learning with Python	
MKT 5762	Marketing Revolution with Machine Learning	

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.

Key: 239

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: 03/31/26 11:21 am

Changes proposed by: Thomas Schuman (tschuman)

Catalog Pages Using this Program

Chemistry

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	CHEM-BS
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. 02/23/26 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
7. 04/15/26 3:09 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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 (jpnfd)
12. Jul 1, 2025 by Thomas Schuman (tschuman)
13. Dec 24, 2025 by Crystal Wilson (wilsoncry)

Chemistry BS

CIP Code

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	2
CHEM 1319	1	COMP SCI 1983	1
ENGLISH 1120	3	ENGLISH 1160	3
MATH 1214 or 1210 ***and*** 1211	4	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
Humanities Elective[1]	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 3329	1
Humanities Elective[1]	3	CHEM 4010 or 4099	1
STAT 3113	3	CHEM 4099	1
		General elective	3
		Social Science Elective[1]	3
	16		14

Senior Year

First Semester	Credits	Second Semester	Credits
CHEM 4099	1	CHEM 4297	3
CHEM 4610	3	General electives	9
CHEM 4810	3	Social Science Elective[1]	3
General electives	6		
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	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 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	2
MATH 1214 or 1210 ***and*** 1211	4	COMP SCI 1983	1
		ENGLISH 1160	3
		MATH 1215	4
	14		15

Sophomore Year

First Semester	Credits	Second Semester	Credits
BIO SCI 2213	3	CHEM 2220	3
BIO SCI 2219	1	CHEM 2229	1
CHEM 2210	3	CHEM 2410	3
CHEM 2219	1	CHEM 2510	4
~~COMP SCI 1500~~	~~3~~	PHYSICS 2135	4
MATH 2222	4		
PHYSICS 1135	4		
	16		15

Junior Year

First Semester	Credits	Second Semester	Credits
CHEM 2420	3	CHEM 2459	2
CHEM 3310	3	CHEM 3320	3
CHEM 4099	1	CHEM 3329	1
CHEM 4610	3	CHEM 4010 or 4099	1
CHEM 4619	2	CHEM 4099	1
STAT 3113	3	CHEM 4620	3
		Humanities Elective[1]	3
	15		14

Senior Year

First Semester	Credits	Second Semester	Credits
CHEM 3510	4	CHEM 4297	3

~~CHEM 4099~~	~~1~~	General electives	6
CHEM 4630	3	Social Science Electives[1]	6
CHEM 4810	3		
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	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	2
ENGLISH 1120	3	COMP SCI 1983	1
MATH 1214 or 1210 ***and*** 1211	4	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 3329	1
PHYSICS 4523	3	CHEM 4099	2
STAT 3113	3	CHEM 4850	3
		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	General Electives	6
CHEM 4610	3	Social Science Elective[1]	3
CHEM 4819	1		
General Electives	4		
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3		
Humanities Elective[1]	3		
	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
ENGLISH 1120	3	MATH 1215	4
MATH 1214 or 1210 ***and*** 1211	4		
	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	2		
COMP SCI 1983	1		
PHYSICS 1145	4		
	15		15

Junior Year

First Semester	Credits	Second Semester	Credits
BIO SCI 3333	3	BIO SCI 3343	3
BIO SCI 3359	1	CHEM 2410	3
CHEM 3310	3	CHEM 3329	1
CHEM 4610	3	CHEM 4010 or 4099	1
CHEM 4619	2	CHEM 4620	3
STAT 3425	4	PSYCH 1101	3
	16		14

Senior Year

First Semester	Credits	Second Semester	Credits
CHEM 3510	4	BIO SCI 3313	3
CHEM 4630	3	CHEM 4297	3
~~CHEM 4650~~	~~3~~	General Elective	3
CHEM 4650	3	Humanities Elective[1]	3
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3	Social Science Elective[1]	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 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.

Hannah Johnson (hjh9x) (03/31/26 11:21 am): Alphabetized plan of study grids.

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: 03/31/26 11:29 am

Changes proposed by: Venkata Sriram Siddhardh Nadendla (nadendla)

Catalog Pages Using this Program

Computer Science

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	CMP SC-BS
Department	Computer Science
Discipline	Computer Science
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
8. 04/15/26 3:09 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
9. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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

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
COMP SCI 1010	1	COMP SCI 1200	3
COMP SCI 1500[1]	3	COMP SCI 1570	3

ENGLISH 1120	3	COMP SCI 1580	1
FR ENG 1100	1	ENGLISH 1160 or 3560	3
Laboratory Science Elective[2]	5	HISTORY 1300, or 1310, or 1200, or POL SCI 1200	3
MATH 1214 or 1211	4	MATH 1215	4
	17		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
COMP ENG 2210[5]	3	COMP SCI 2300	3
COMP SCI 1575	3	COMP SCI 2500	3
COMP SCI 1585	1	COMP SCI 2580	1
Gen. Ed. Elective[3]	3	PHILOS 3225, or 3235, or 4340, or 4368 (Ethics Elective)[4]	3
MATH 3108	3	Sci/Eng Elective[7]	3
Natural Sciences Elective[3]	3	Statistics Elective[6]	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	Free Elective[9, 11]	4
Comp Sci Elective[8, 9]	3	Gen. Ed. Elective[3]	3
Free Elective[9, 11]	3		
	16		16

Total Credits: 128

Artificial Intelligence Emphasis Area

Core Requirements:

COMP SCI 3402	Introduction to Data Science	3

COMP SCI 5400	Introduction To Artificial Intelligence	3
COMP SCI 5420	Introduction to Machine Learning	3
Two of the following:		
COMP SCI 44XX/54XX [12]		
Any COMP SCI 5001 from a preapproved list approved by the department		

Cybersecurity Emphasis Area

Core Requirements:		
COMP SCI 5602	Introduction to Cryptography	3
COMP SCI 5603	Internet Security	3
COMP SCI 5604	Ethical Hacking	3
One of the following:		
COMP SCI 3601	Digital Forensics	3
COMP SCI 4700	Intellectual Property For Computer Scientists	3
COMP SCI 5408	Game Theory for Computing	3
COMP SCI 5601	Security Operations & Program Management	3
COMP SCI 5605	AI Security	3

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.
Hannah Johnson (hjh9x) (03/31/26 11:29 am): Alphabetized the plan of study.

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
5. 04/15/26 3:09 pm

Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda

6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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.

Key: 25

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: 04/16/26 8:59 am

Changes proposed by: David Lipke (lipked)

Catalog Pages Using this Program

Ceramic Engineering

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	CR ENG-BS
Department	Materials Science & Engineering
Discipline	Ceramic Engineering
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

Agenda post

5. 04/15/26 3:09 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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.

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[1,2]	3
	16		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
CER ENG 2010	0.5	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	General Education Elective[3]	3
		STAT 3113 or 3117	3
	16.5		17

Junior Year

First Semester	Credits	Second Semester	Credits
CER ENG 3010	0.5	~~CER ENG 3325~~	~~2~~
CER ENG 3210	3	CER ENG 3410	3
CER ENG 3220[1]	3	CER ENG 3425	2
CER ENG 3315[1]	2	CER ENG 4310	3
CIV ENG 2210[1]	3	General Education Elective[3]	3
~~STAT 3113 or 3117~~	~~3~~	~~General Education Elective[2]~~	~~3~~
~~Technical Elective[4]~~	~~2~~	PHYSICS 2305[1]	3
MATH 3304[1]	3	Technical Elective[4]	3
	14.5		17

Senior Year

First Semester	Credits	Second Semester	Credits
CER ENG 4096[1]	3	CER ENG 4097	3
CER ENG 4250	3	CER ENG 4220	3
CER ENG 4410	3	CER ENG 4240	3
General Education Elective[3]	3	General Education Elective[3]	3
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, and in both COMP SCI 1972 and COMP SCI 1982 or COMP SCI 1973 and COMP SCI 1983.

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 andMIL 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

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

Energy Materials

CIV ENG 5642	Sustainability, Population, Energy, Water, and Materials	3
ENG MGT 5513	Energy and Sustainability Management Engineering	3

GEO ENG 5556	Renewable Energy Systems	3
MECH ENG 5537	Fuel Cell Principles	3
MECH ENG 5541	Applied Energy Conversion	3
MIN ENG 4524	Energy Economics	3
MS&E 5230	Energy Materials	3
Functional Materials		
CER ENG 5420	Optical Properties Of Materials	3
PHYSICS 4323	Elementary Solid State Physics	3
SEMI ENG 2100	Fundamentals of Semiconductor Materials	3
SEMI ENG 3100	Semiconductor Materials Processing	3
SEMI ENG 3101	Semiconductor Materials Processing Laboratory	3
SEMI ENG 4101	Semiconductor Device Fabrication and Testing Laboratory	3
Materials for Extreme Environments		
CER ENG 5250	Refractories	3
MET ENG 4637	Material Selection, Fabrication, And Failure	3
MET ENG 5170	Nuclear Materials I	3
MET ENG 5310	Corrosion and Its Prevention	3
MS&E 5330	Composite Materials Science and Engineering	3
Computational Materials Science and Engineering		
CHEM 5001	Special Topics (Practical Computational Modeling for Chemistry and Materials Science)	3
MECH ENG 5212	Introduction to Finite Element Analysis	3
MS&E 5001	Special Topics (Applied Artificial Intelligence for Materials Engineering)	3
PHYSICS 5409	Computational Physics Laboratory	3
SEMI ENG 4100	Semiconductor Device Simulation	3
SEMI ENG 4200	Semiconductor Process Simulation	3
Materials Characterization and Analysis		
CER ENG 5115	X-Ray Diffraction Analysis	3
CHEM 2510	Analytical Chemistry I	4
CHEM 3310	Inorganic Chemistry I	3

CHEM 3329	Inorganic Chemistry Laboratory	1
CHEM 3510	Analytical Chemistry II	4
MET ENG 5520	Electron Microscopy	3

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.

Hannah Johnson (hjh9x) (04/02/26 12:04 pm): Updated footnote 1 to include COMP SCI 1973, 1983, 1972, and 1982. Added footnote 1 to the Programming Elective in Freshman year, second semester per email from David Lipke.

Hannah Johnson (hjh9x) (04/08/26 11:16 am): Corrected grammar in footnote 1 to reflect 'Physics 2305, and'.

Hannah Johnson (hjh9x) (04/16/26 8:59 am): Alphabetized course listings.

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: 04/16/26 9:01 am

Changes proposed by: William Showalter (wes)

Catalog Pages Using this Program

Civil Engineering

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	CV ENG-BS
Department	Civil Engineering
Discipline	Civil Engineering
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. **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

5. 04/15/26 3:09 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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)

Civil Engineering BS

CIP Code

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
CHEM 1100	1	Gen Ed Elective[1]	3
CHEM 1305	4	Gen Ed Elective[1]	3
CHEM 1319	1	MATH 1215	4
ENGLISH 1120	3	MECH ENG 1720	3
FR ENG 1100[2]	1	PHYSICS 1135	4
~~CHEM 1310 & CHEM 1319~~	~~5~~		
HISTORY 1200, or 1300, or 1310, or POL SCI 1200[1]	3		
MATH 1214 or 1211	4		
	17		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2003[2]	3	CIV ENG 2210[2]	3
CIV ENG 2200[2]	3	CIV ENG 2211[2]	1
CIV ENG 2401[2]	3	GEO ENG 1150	3
MATH 2222	4	MATH 3304	3
PHYSICS 2135	4	MECH ENG 2350	2
		STAT 3113	3
	17		15

Junior Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2601[2]	3	CIV ENG 3116[2]	3
CIV ENG 3201[2]	3	CIV ENG 3334[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

CIV ENG 5441	Professional Aspects Of Engineering Practice	3
CIV ENG 5442	Construction Planning and Scheduling Strategies	3
CIV ENG 5445	Construction Methods	3
CIV ENG 5446	Management Of Construction Costs	3
CIV ENG 5448	Green Engineering: Analysis of Constructed Facilities	3

CIV ENG 5449	Engineering and Construction Contract Specifications	3
CIV ENG 5451	Information Technology Applications in the Construction Industry	3
CIV ENG 5452	Pre-Project Planning and Feasibility Studies	3
CIV ENG 5453	Logistics for Construction Industry	3
CIV ENG 5454	Construction Technology for High-Rise Buildings	3
CIV ENG 5455	Construction Industry Best Practices	3

Materials Engineering

CIV ENG 5112	Bituminous Materials	3
CIV ENG 5113	Composition And Properties Of Concrete	3
CIV ENG 5117	Asphalt Pavement Design	3
CIV ENG 5118	Smart Materials and Sensors	3
CIV ENG 5156	Pavement Design	3

Environmental Engineering

CIV ENG 3615	Water And Wastewater Engineering	3
CIV ENG 5605	Environmental Systems Modeling	3
CIV ENG 5619	Environmental Engineering Design	3
CIV ENG 5630	Remediation of Contaminated Groundwater and Soil	3
CIV ENG 5635	Phytoremediation and Natural Treatment Systems: Science and Design	3
CIV ENG 5640	Environmental Law And Regulations	3
CIV ENG 5642	Sustainability, Population, Energy, Water, and Materials	3
CIV ENG 5650	Public Health Engineering	3
CIV ENG 5660	Introduction To Air Pollution	3
CIV ENG 5662	Air Pollution Control Methods	3
CIV ENG 5665	Indoor Air Pollution	3
CIV ENG 5670	Solid Waste Management	3

Geotechnical Engineering

CIV ENG 4729	Foundation Engineering	3

CIV ENG 5715	Intermediate Soil Mechanics	3
CIV ENG 5716	Geotechnical Earthquake Engineering	3
CIV ENG 5729	Foundation Engineering II	3
CIV ENG 5744	Geosynthetics in Engineering	3
CIV ENG 5750	Transportation Applications of Geophysics	3

Water Resources Engineering

CIV ENG 5330	Unsteady Flow Hydraulics	3
CIV ENG 5331	Hydraulics Of Open Channels	3
CIV ENG 5332	Transport Processes in Environmental Flows	3
CIV ENG 5333	Intermediate Hydraulic Engineering	3
CIV ENG 5335	Water Infrastructure Engineering	3
CIV ENG 5337	River Mechanics And Sediment Transport	3
CIV ENG 5338	Hydrologic Engineering	3
CIV ENG 5360	Water Resources And Wastewater Engineering	3

Structural Engineering

CIV ENG 5118	Smart Materials and Sensors	3
CIV ENG 5203	Applied Mechanics In Structural Engineering	3
CIV ENG 5205	Structural Analysis II	3
CIV ENG 5206	Low-Rise Building Analysis and Design	3
CIV ENG 5207	Computer Methods of Structural Analysis	3
CIV ENG 5208	Structural Dynamics	3
CIV ENG 5209	Wind Engineering	3
CIV ENG 5210	Advanced Steel Structures Design	3
CIV ENG 5220	Advanced Concrete Structures Design	3
CIV ENG 5222	Prestressed Concrete Design	3
CIV ENG 5231	Infrastructure Strengthening with Composites	3
CIV ENG 5260	Analysis And Design Of Wood Structures	3
CIV ENG 5270	Structural Masonry Design	3

Transportation Engineering

CIV ENG 5250	Air Transportation	3
CIV ENG 5510	Geometric Design Of Highways	3
CIV ENG 5513	Traffic Engineering	3
CIV ENG 5515	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.

Hannah Johnson (hjh9x) (04/16/26 9:01 am): Alphabetized course listings.

Key: 152

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
5. 04/15/26 3:09 pm Hannah Johnson

(hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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: ~~cyberseecsigs.pdf~~

Reviewer Comments

Key: 295

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
5. 04/15/26 3:09 pm Hannah Johnson

(hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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

Key: 247

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: 04/09/26 2:56 pm

Changes proposed by: Michael Davis (davismc)

Catalog Pages Using this Program

Economics

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
5. 04/15/26 3:09 pm Hannah Johnson

(hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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

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
BIO SCI 1113, or 1173, or 1223	3	ECON 1200[2]	3
Lab w/Living or Physical Science Course	1	HISTORY 1200, or 1300, or 1310	3
ECON 1100[2]	3	IS&T 1551, or 1561, or COMP SCI 1971[3]	3
ENGLISH 1120	3	MATH 1212	4
MATH 1140	3	PSYCH 1101	3
	13		16

Sophomore Year

First Semester	Credits	Second Semester	Credits
ECON 2100[2]	3	ART 1180, or 1185, or MUSIC 1150, or THEATRE 1190	3
ENGLISH 1211, or 1212, or 1231, or 1221, or 1222, or 2230	3	BUS 1210	3
Free Elective	3	Chemistry, Geology, or Physics	3
SP&M S 1185	3	ECON 2200[2]	3
STAT 3111	3	Free Electives	3
	15		15

Junior Year

First Semester	Credits	Second Semester	Credits
ECON 3300[2]	3	ECON 3333[2]	3
Economics Elective[4]	3	Economics Electives[4]	3
ENGLISH 1600	3	Free Elective	6
ENG MGT 2110	3	Gen Ed. Elective[1]	3
POL SCI 1200	3		
	15		15

Senior Year

First Semester	Credits	Second Semester	Credits

~~ECON 4538[3]~~	~~3~~	Economics Elective[4]	3
ECON 5360[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.

~~5 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

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.

Hannah Johnson (hjh9x) (04/03/26 1:13 pm): Removed Geophysics from the gen ed requirement of natural sciences in Sophomore year, second semester.

Crystal Wilson (wilsoncry) (04/09/26 2:56 pm): Econ 5360 is being listed as a required course for senior year, first semester. The course is also listed under Decision Data Analytics Emphasis and Financial Economics and Technology Emphasis. Per conversation with Dr. Lo students do not complete emphasis areas anymore. Students may complete undergraduate certificates. She says she plans to complete the approval process for emphasis areas (new emphasis areas & revisions) for the 2027-2028 catalog for deletion of the emphasis areas.

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: 04/16/26 9:03 am

Changes proposed by: Joan Schuman (schumanj)

Catalog Pages Using this Program

Engineering Management

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	ENG MG-BS
Department	Engineering Mgt & Sys Engr
Discipline	Engineering Management
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 RENGMNGT 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 RENGMNGT 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

15. 04/15/26 3:10 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
16. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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.

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
CHEM 1100	1	HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3
CHEM 1305 or 1310	4	MATH 1215	4
CHEM 1319	1	MECH ENG 1720	3
ENGLISH 1120	3	PHYSICS 1135[1]	4
~~HISTORY 1200, or 1300, or 1310, or POL SCI 1200[4]~~	~~3~~	~~Programming Elective[3]~~	~~3~~
FR ENG 1100	1	~~General Education Elective[2]~~	~~3~~
~~CHEM 1310[1]~~	~~4~~		
MATH 1214 or 1211[1]	4		
	14		14

Sophomore Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2200[1]	3	ENG MGT 2110[1]	3
ENG MGT 1210[1]	2	ENG MGT 2211[1]	3
ENG MGT 2310[1]	3	~~PSYCH 1101[4]~~	~~3~~
MATH 2222[1]	4	MATH 3304[1]	3
PHYSICS 2135[1]	4	Programming Elective[3]	3
		STAT 3117 or 3113[1]	3
	16		15

Junior Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2210	3	ENGLISH 3560 or 1160	3
ENG MGT 3310[1]	3	ENG MGT 3320[1]	3
ENG MGT 3510[1]	3	ENG MGT 4710[1]	3
PSYCH 1101	3	General Education Elective[2]	3
SP&M S 1185[4]	3	MECH ENG 2350	2
~~General Education Elective[2]~~	~~3~~	MECH ENG 2527	3
	15		17

Senior Year

First Semester	Credits	Second Semester	Credits
ELEC ENG 2800	3	Emphasis Area Required Course	3
Emphasis Area Required Course	3	Emphasis Area Required Course	3
Emphasis Area Required Course	3	ENG MGT 4907[1]	3
~~Emphasis Area Required Course~~	~~3~~	ENG MGT Technical Elective	3
ENG MGT 4110[1]	3	General Education Elective[2]	3
General Education Elective[2]	3		
	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

ENG MGT 5410	Industrial System Simulation	3
ENG MGT 5511	Technical Entrepreneurship	3
ENG MGT 5512	Legal Environment	3
ENG MGT 5614	Supply Chain Management Systems	3
ENG MGT Technical Elective (in consultation with your advisor)		3

Industrial Engineering

ENG MGT 4310	Materials Handling and Plant Layout	3
ENG MGT 4330	Human Factors	3
ENG MGT 5410	Industrial System Simulation	3
ENG MGT 5414	Introduction To Operations Research	3
ENG MGT Technical Elective (in consultation with your advisor)		3

ROTC

ENG MGT Technical Elective (in consultation with advisor)		3
MIL ARMY 3250	Adaptive Tactical Leadership	3
or MIL AIR 3110	Leading People & Effective Communication I	
MIL ARMY 3500	Leadership in Changing Environments	3
or MIL AIR 3120	Leading People & Effective Communication II	
MIL ARMY 4250	Developing Adaptive Leaders	3
or MIL AIR 4110	National Security, Leadership Responsibilities & Commissioning Preparation I	
MIL ARMY 4500	Leadership in a Complex World	3
or MIL AIR 4120	National Security, Leadership Responsibilities & Commissioning Preparation II	

General

Engineering Area Courses (Engineering Discipline)	12
ENG MGT-Technical Elective (in consultation with your advisor)	3

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. -

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 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. The lecture component must be completed with a grade of "C" or better.

4

General Education discipline specific required course.

Accelerated BS/MS Program Option for Engineering Management

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:

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)

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 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 Documents	EMGTPCROTCemphasis.docx 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.

Hannah Johnson (hjh9x) (04/16/26 9:03 am): Alphabetized course listings.

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
5. 04/15/26 3:10 pm Hannah Johnson

(hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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

Econ-Undergrad CTs.pdf
MST PC January 2023.pdf
Econ-UGCT-Course change.pdf

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: 04/16/26 9:04 am

Changes proposed by: Katherine Grote (grotekr)

Catalog Pages Using this Program

Geological Engineering

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

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 RGEOSENG 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

Agenda post
6. 04/15/26 3:10 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
7. 04/15/26 3:23 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

History

1. Mar 18, 2014 by Lahne Black (lahne)
2. Nov 18, 2014 by pantaleoa
3. Nov 18, 2014 by pantaleoa
4. Jul 20, 2015 by pantaleoa
5. Feb 27, 2018 by Katherine Grote (grotekr)
6. Jun 18, 2018 by Katherine Grote (grotekr)
7. Jun 14, 2019 by Katherine Grote (grotekr)
8. Mar 3, 2020 by ershenb
9. Jul 1, 2020 by Leslie Gertsch (gertschl)
10. Jun 10, 2021 by Sharon Lauck (laucks)
11. Oct 28, 2021 by Katherine Grote

Rationale for Inactivation

(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)

Supporting Documents

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
CIM Prospectus	
Academic Level	Undergraduate
Program Code	GE ENG-BS
Department	Earth Sciences and Engineering
Discipline	Geological Engineering
Offered by	
Title	Geological Engineering BS
CIP Code	

Purpose

Intended Audience

Program-Specific
Admission

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
CHEM 1100	1	ENGLISH 1120	3
~~CHEM 1310~~	~~4~~	GEOLOGY 2611	3
CHEM 1305	4	MATH 1215	4
CHEM 1319	1	MECH ENG 1720	3
~~ENGLISH 1120~~	~~3~~	PHYSICS 1135	4
FR ENG 1100	1	~~GEO ENG 1150 or GEOLOGY 1110~~	~~3~~
GEO ENG 1150	3	~~General Education Elective[2]~~	~~3~~
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3		
MATH 1214 or 1211[1]	4		
	17		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
General Education Elective[2]	3	CIV ENG 2200	3
GEO ENG 2110	1	~~GEO ENG 2110~~	~~1~~
GEO ENG 3148	3	~~GEOLOGY 2611~~	~~3~~
~~Programming Elective[3]~~	~~3~~	GEO ENG 3175	3
MATH 2222	4	~~General Education Elective[2]~~	~~3~~
PHYSICS 2135	4	GEOLOGY 3620	3
		MATH 3304	3
		PHILOS 3225	3
	15		15

Junior Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2210	3	CIV ENG 3330	3
General Education Elective[2]	3	CIV ENG 3715 or MIN ENG 5823	3
GEO ENG 5331	3	GEO ENG 5174	3
GEOLOGY 3310	3	Technical Elective[3]	3
GEOLOGY 3319	1	Technical Elective[3]	3
MECH ENG 2350	2		
	15		15

Senior Year

First Semester	Credits	Second Semester	Credits
~~GEO ENG 4010~~	~~0.5~~	~~GEO ENG 4010~~	~~0.5~~
ENGLISH 3560[5]	3	Eng Econ Elective[8]	3
Field Technical Elective[6]	3	General Education Elective[2]	3

GEO ENG 5441	3	GEO ENG 5090	3
GEO ENG 5443	3	Geo Eng Elective[7]	3
Geophysics Elective[4]	3	Statistics Elective[9]	3
~~Technical Elective[4]~~	~~3~~		
	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 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		
CIV ENG 3715	Fundamentals of Geotechnical Engineering	3
CIV ENG 4729	Foundation Engineering	3
GEO ENG 5146	Applications Of Geographic Information Systems	3
GEO ENG 5471	Rock Engineering	3
MIN ENG 5823	Rock Mechanics	3
Environmental and Engineering Geophysics		
GEO ENG 5144	Remote Sensing Technology	3
GEO ENG 5736	Geophysical Field Methods	3
GEO ENG 5761	Transportation Applications of Geophysics	3
GEO ENG 5782	Environmental and Engineering Geophysics	3
GEOPHYS 4241	Electrical Methods In Geophysics	3
GEOPHYS 4261	Geophysical Instrumentation	1
GEOPHYS 5231	Seismic Data Processing	3
Groundwater Hydrology and Environmental Protection		
CIV ENG 5640	Environmental Law And Regulations	3
GEO ENG 4276	Environmental Aspects Of Mining	
GEO ENG 5233	Risk Assessment In Environmental Studies	3
GEO ENG 5235	Environmental Geological Engineering	3
GEO ENG 5237	Geological Aspects Of Hazardous Waste Management	3
GEO ENG 5320	Groundwater Modeling	3
GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
PET ENG 3330	Formation Evaluation	3
Quarry and Mine Engineering		
CIV ENG 3116	Construction Materials, Properties And Testing	3
GEO ENG 4276	Environmental Aspects Of Mining	3
GEO ENG 5471	Rock Engineering	3

GEO ENG 5575	Aggregates And Quarrying	3
MIN ENG 3913	Mineral Identification and Exploration	3
MIN ENG 5612	Principles of Explosives Engineering	3
MIN ENG 5822	Strata Control	3
MIN ENG 5823	Rock Mechanics	3
MIN ENG 5912	Mine Power and Drainage	3
Renewable and Conventional Energy Resources		
GEO ENG 5146	Applications Of Geographic Information Systems	3
GEO ENG 5556	Renewable Energy Systems	3
GEOLOGY 5511	Applied Petroleum Geology	3
MIN ENG 5322	Coal Mining Methods	3
MIN ENG 5422	Coal Preparation	3
MIN ENG 5823	Rock Mechanics	3
~~PET ENG 2510~~	~~Properties of Hydrocarbon Fluids~~	~~3~~
PET ENG 3330	Formation Evaluation	3
PET ENG 3520	Petroleum Reservoir Engineering	3
PET ENG 4520	Well Test Analysis	3

Accelerated BS/MS Option (Graduate Pathway)

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

Have completed 64 credit hours of course work, including:

All chemistry and mathematics requirements, and

21 credit hours of geological engineering courses with a minimum GPA of 3.20 in the geological engineering courses.

Complete an application listing the courses to be shared, with approval from the undergraduate advisor and a recommendation from the geological engineering faculty member who agrees to serve as their MS advisor. The shared courses may not be undergraduate research, special problems, or transfer courses. Applications are due within one semester of completing the last shared course.

Follow all geological engineering non-thesis MS program requirements (see the Graduate Catalog).

All other MS degree requirements remain the same. The program may be combined with existing honors research, emphasis areas, and certificate options. An additional six credit hours of coursework for graduate credit (beyond the shared BS/MS credits) can be taken while in the undergraduate program by applying for dual

undergraduate/graduate enrollment. Taking additional courses for graduate credit as a dual enrolled student will require formal application to the graduate program. Upon application, acceptance to the geological engineering MS degree program from this option is automatic as long as the student remains in good standing (GPA above 3.0 and B's or better in all graduate courses within the program). To remain in this option, the student must meet geological engineering graduate academic performance requirements and maintain continuous enrollment at Missouri S&T. If the student exits the program before completion of the MS degree, or fails to maintain continuous enrollment at Missouri S&T, the shared-credit courses may not apply toward graduate requirements in the event of future readmission.
It is the student's responsibility to check how dual-enrollment status and graduate coursework would affect scholarships and other financial aid. Graduate students are not eligible for Federal Pell Grants, though they are eligible for Federal Financial Aid, as well as fellowships and teaching/research assistantships. International students are responsible for checking with the International Affairs Office during completion of an accelerated BS/MS to ensure immigration status is properly maintained throughout the program.
This option reduces the cost and the time required to earn a MS. See the Graduate Pathway section of this catalog, and the Geological Engineering Masters section of the Graduate Catalog, for additional details.

Justification for request

Please see attached document

Attach Budget

System Approval Letter

MDHE Approval

Supporting Documents

curriculum changes spring 2026.docx

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.

Hannah Johnson (hjh9x) (03/31/26 11:12 am): Alphabetized senior year first semester.

Hannah Johnson (hjh9x) (04/09/26 1:12 pm): Removed PET ENG 2510 from footnote 7 and from the Conventional Energy Resources Emphasis area due to a course inactivation of PET ENG 2510, approved by Katherine Grote.

Hannah Johnson (hjh9x) (04/16/26 9:04 am): Alphabetized course listings.

Key: 156

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: 03/31/26 11:41 am

Changes proposed by: Kelly Liu (liukh)

Catalog Pages Using this Program

Geology and Geophysics

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	GL&GPH-BS
Department	Earth Sciences and Engineering
Discipline	Geology
Title	

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

Approval Path

1. 03/05/26 1:00 pm Stephen Gao (sgao): Approved for RGEOSENG 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
5. 04/15/26 3:10 pm

Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda

6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

History

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

Geology and Geophysics BS

CIP Code	40.0699 - Geological and Earth Sciences/ Geosciences, Other.

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
CHEM 1100	1	Elective (Science & Eng)[2]	3
CHEM 1305	4	General Education Elective[1]	3
CHEM 1319	1	GEOLOGY 1120	3
ENGLISH 1120	3	GEOLOGY 1129	1
~~CHEM 1310~~	~~4~~	MATH 1214 or 1211[3]	4
General Education Elective[1]	3		
GEOLOGY 1110 or GEO ENG 1150	3		
	15		14

Sophomore Year

First Semester	Credits	Second Semester	Credits
COMP SCI 1500	3	Elective (Geo & Geop)[4]	3
Elective (Geo & Geop)[4]	3	ENGLISH 1160, or 3560, or SPM S 1185	3
General Education Elective[1]	3	GEOLOGY 2611	3
GEOPHYS 3210	3	GEOLOGY 3410	3
MATH 1215	4	HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3
	16		15

Junior Year

First Semester	Credits	Second Semester	Credits	Summer Semester	Credits
Elective (Geo & Geop)[4]	3	Elective (Geo & Geop)[4]	3	GEOLOGY 4097	3
GEOLOGY 3310	3	General Education Elective[1]	3		
GEOLOGY 3319	1	GEOLOGY 2096	3		
PHYSICS 1135[5]	4	GEOLOGY 3620	3		
STAT 3113, or 3117, or GEO ENG 4115	3	GEOLOGY 3629	1		
	14		13		3

Senior Year

First Semester	Credits	Second Semester	Credits
Elective (Geo & Geop)[4]	9	Elective (Science & Eng)[2]	9
Elective (Science & Eng)[2]	6	Free Elective[6]	3
GEOLOGY 4010	0.5	GEOLOGY 4010	.5
		GEOPHYS 5096	3
	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.		
GEOLOGY 1110	Physical and Environmental Geology	3
GEOLOGY 1120	Evolution Of The Earth	3

GEOLOGY 1129	Evolution of the Earth Laboratory [5]	1
GEOLOGY 2096	Field Geology	3
GEOLOGY 2611	Physical Mineralogy And Petrology	3
GEOLOGY 3310	Structural Geology	3
GEOLOGY 3319	Structural Geology Lab	1
GEOLOGY 3410	Introduction To Geochemistry	3
GEOLOGY 3620	Stratigraphy And Sedimentation	3
GEOLOGY 3629	Stratigraphy Lab	1
GEOLOGY 4010	Seminar	0.5
GEOLOGY 4097	Advanced Field Geology	3
GEOPHYS 3210	Introduction to Geophysics	3
GEOPHYS 5096	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.

CER ENG 2110	Atomic Structure Of Crystalline Ceramics	3
CER ENG 3220	Phase Equilibria	3
GEOLOGY 3511	Introduction to Mineral Deposits	3
GEOLOGY 4451	Aqueous Geochemistry	3
GEOLOGY 4461	Isotope Geochemistry	3
GEOLOGY 4631	Advanced Igneous and Metamorphic Petrology	4
GEOLOGY 4841	Geological Field Studies	3
GEOLOGY 5611	Granites And Rhyolites	4
GEOLOGY 5671	Clay Mineralogy	3

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.		
GEO ENG 3175	Geomorphology And Terrain Analysis	3
GEOLOGY 3511	Introduction to Mineral Deposits	3
GEOLOGY 3811	Fundamentals Of Geographic Information Systems	3
or GEO ENG 3148	Fundamentals Of Geographic Information Systems	
GEOLOGY 4630	Systematic Paleontology	3
GEOLOGY 4631	Advanced Igneous and Metamorphic Petrology	4
GEOLOGY 4711	Paleoclimatology and Paleoecology	3
GEOLOGY 4841	Geological Field Studies	3
GEOLOGY 5513	Petroleum Geology	3
GEOLOGY 5611	Granites And Rhyolites	4
GEOLOGY 5741	Micropaleontology	3
GEOLOGY 6311	Advanced Structural Geology	3

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.		
GEOLOGY 4310	Remote Sensing Technology	3
GEOPHYS 4231	Seismic Interpretation	3
GEOPHYS 5202	Exploration and Development Seismology	3
GEOPHYS 5231	Seismic Data Processing	3
GEOPHYS 5261	Computational Geophysics	3
GEOPHYS 5736	Geophysical Field Methods	3
or GEO ENG 5736	Geophysical Field Methods	
MATH 2222	Calculus III	4

MATH 3108	Linear Algebra I	3
MATH 3304	Elementary Differential Equations	3
MATH 5325	Partial Differential Equations	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.		
BIO SCI 1173	Introduction to Environmental Sciences	3
ENV ENG 2601	Fundamentals of Environmental Engineering and Science	3
ENV ENG 5640	Environmental Law And Regulations	3
GEO ENG 5237	Geological Aspects Of Hazardous Waste Management	3
GEO ENG 5331	Subsurface Hydrology	3
GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
GEOLOGY 4431	Methods Of Karst Hydrogeology	3
GEOLOGY 4451	Aqueous Geochemistry	3
GEOLOGY 4711	Paleoclimatology and Paleoecology	3
GEOPHYS 5782	Environmental and Engineering Geophysics	3
or GEO ENG 5782	Environmental and Engineering Geophysics	

Petroleum Geology

Students should complete at least 5 courses (15 hours minimum) from the list. Students may also choose additional courses to be selected from an approval list and with guidance from student's advisor.		
GEOLOGY 4310	Remote Sensing Technology	3
GEOLOGY 4630	Systematic Paleontology	3
GEOLOGY 5311	Depositional Systems	3
GEOLOGY 5513	Petroleum Geology	3
GEOLOGY 5661	Advanced Stratigraphy and Basin Evolution	3
GEOLOGY 5741	Micropaleontology	3

GEOPHYS 5202	Exploration and Development Seismology	3
PET ENG 3330	Formation Evaluation	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

Hannah Johnson (hjh9x) (03/31/26 11:41 am): Alphabetized the plan of study grid and all emphasis areas.

Key: 64

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
5. 04/15/26 3:10 pm Hannah Johnson

(hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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.

Key: 81

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
8. 04/15/26 3:10 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
9. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

History

1. Apr 28, 2014 by imorgan
2. Jun 13, 2014 by pantaleoa
3. Jun 13, 2014 by pantaleoa

Mathematics Minor

CIP Code

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.

Key: 223

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: 04/16/26 9:35 am

Changes proposed by: Nishant Kumar (nkwtb)

Catalog Pages Using this Program

Mechanical Engineering

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	MC ENG-BS
Department	Mechanical & Aerospace Engineering
Discipline	Mechanical Engineering
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. **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
5. 04/15/26 3:10 pm

Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda

6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

History

1. Feb 24, 2014 by J. Keith Nisbett (nisbett)
2. Aug 6, 2014 by J. Keith Nisbett (nisbett)
3. Jul 21, 2015 by pantaleoa
4. May 3, 2018 by J. Keith Nisbett (nisbett)
5. Jun 14, 2019 by J. Keith Nisbett (nisbett)
6. Mar 3, 2020 by 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 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)

Mechanical Engineering BS

CIP Code

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.

NOTE: 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.

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
CIV ENG 2200[a]	3	MATH 3304[a]	3
MATH 2222[a]	4	MECH ENG 2360[a]	3
MECH ENG 1761	1	MECH ENG 2519[a]	3
MECH ENG 2653	3	MECH ENG 2761	2
PHYSICS 2135[a]	4	MET ENG 2110[a]	3
		Programming Elective[a, b]	3
	15		17

Junior Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2210[a]	3	ENGLISH 1160, or 3560, or SPM S 1185	3
CIV ENG 2211	1	MECH ENG 3131	3
Elective-Advanced Math/Stat[d]	3	MECH ENG 3411[a]	3
ELEC ENG 2800	3	MECH ENG 3525	3
MECH ENG 3313	3	MECH ENG 3708	3
MECH ENG 3521	3	MECH ENG 4840	2
	16		17

Senior Year

First Semester	Credits	Second Semester	Credits
Gen. Ed. Elective[c]	3	Breadth elective[g]	3
Gen. Ed. Elective[c]	3	ENG MGT 1100	1

MECH ENG 4479	3	ENG MGT 1210	2
MECH ENG 4842	2	MECH ENG 4480	1
MECH ENG technical elective[e]	3	MECH ENG 4761	3
Technical elective[f]	3	MECH ENG 5000-level technical elective[e]	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

Six hours of technical electives, subject to approval by the student's advisor, must be in the department of mechanical and aerospace engineering. At least three of these technical elective hours must be at the 5000 level. This elective may not include co-op, special problems, or research credits, such as as 3002, 4000, or 4099. Honors students have special requirements for technical electives.

f

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.

g

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).

~~**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, or have a prerequisite that is part of the required mechanical engineering curriculum. Exceptions to the course level may be approved by the student's advisor; (2) Any three credit hour course in the list of approved courses for the global studies minor; or (3) Any combination of three credit hours from co-op (3002), special problems (3000, 4000, or 5000), 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
MECH ENG 5571	Environmental Controls	3
MECH ENG 5575	Mechanical Systems For Environmental Control	3
b. One course from the following list:		3
MECH ENG 5131	Intermediate Thermofluid Mechanics	3
or AERO ENG 5131	Intermediate Thermofluid Mechanics	
MECH ENG 5139	Computational Fluid Dynamics	3
or AERO ENG 5139	Computational Fluid Dynamics	
MECH ENG 5519	Advanced Thermodynamics	3
or AERO ENG 5519	Advanced Thermodynamics	
MECH ENG 5525	Intermediate Heat Transfer	3

or AERO ENG 5525	Intermediate Heat Transfer	
c. One additional course from either list “a” or list “b”, or from the following list:		3
ECON 4540	Energy Economics	3
ELEC ENG 5150	Photovoltaic Systems Engineering	3
ENV ENG 5660	Introduction To Air Pollution	3
NUC ENG 5257	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.

Manufacturing Processes Emphasis Area for Mechanical Engineering

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

a. The following course:		3
MECH ENG 3653	Manufacturing	3
b. Three of the following courses:		3
MECH ENG 3001	Special Topics	3
MECH ENG 5282	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 Elective	3	ENG MGT 1100	1
Manufacturing Technical Elective	3	ENG MGT 1210	2
MECH ENG 3708	3	Manufacturing Technical Elective	3
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

~~All mechanical engineering students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree, however, it is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process as described in Assessment Requirements found elsewhere in this catalog.~~

Mechanical Design and Analysis Emphasis Area

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

a. One design course from the following list:		3
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
MECH ENG 5211	Introduction To Continuum Mechanics	3
MECH ENG 5212	Introduction to Finite Element Analysis	3
MECH ENG 5222	Introduction To Solid Mechanics	3
MECH ENG 5234	Stability of Engineering Structures	3
MECH ENG 5236	Fracture Mechanics	3
MECH ENG 5238	Fatigue Analysis	3
MECH ENG 5307	Vibrations I	3
MECH ENG 5313	Intermediate Dynamics Of Mechanical And Aerospace Systems	3
MECH ENG 5449	Robotic Manipulators and Mechanisms	3

MECH ENG 5478	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
ELEC ENG 2800	Electrical Circuits	3
Elective-Advanced Math/Stat		3
ENG MGT 1100	Practical Concepts for Technical Managers	1
MECH ENG 5000-level technical elective		3
Technical elective		3
The following requirements are added (16 credit hours):		
ELEC ENG 2100	Circuits I	3
ELEC ENG 2101	Circuit Analysis Laboratory I	1
ELEC ENG 2120	Circuits II	3
Systems Management elective. One of the following:		
ENG MGT 3320	Introduction to Project Management	3
ENG MGT 4710	Quality	3
MECH ENG 5715	Concurrent Engineering	3
MECH ENG 5757	Integrated Product And Process Design	3
MECH ENG 5758	Integrated Product Development	3
Systems Integration technical elective. One of the following:		3
MECH ENG 5307	Vibrations I	3
MECH ENG 5478	Mechatronics	3

MECH ENG 5481	Mechanical And Aerospace Control Systems	3
MECH ENG 5533	Internal Combustion Engines	3
MECH ENG 5571	Environmental Controls	3
MECH ENG 5575	Mechanical Systems For Environmental Control	3
MECH ENG 5656	Design For Manufacture	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 5763	Computer Aided Design: Theory and Practice	3
One of the following:		
STAT 3113	Applied Engineering Statistics	3
STAT 3117	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	Credits
CIV ENG 2210[a]	3	ELEC ENG 2120	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**~~

~~All mechanical engineering students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree. However, it is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process as described in assessment requirements found elsewhere in this catalog.~~

Justification for request

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.

Hannah Johnson (hjh9x) (04/16/26 9:35 am): Removed footnote e from the BS plan of study grid and corrected footnotes f, g, and h to reflect this in the footnote section and in the plan of study grid. I added the information contained in footnote e to the description of the BS as a NOTE. I removed footnote e from the manufacturing processes emphasis area, which did not affect the plan of study grid for this area. I removed footnote h from the systems integration emphasis area, which did not affect the plan of study grid for this section. Both of these footnotes included the same information now listed in the NOTE in the description.

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

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	MI ENG-BS
Department	Mining and Explosives Engineering
Discipline	Mining Engineering
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
5. 04/15/26 3:11 pm

Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda

6. 04/15/26 3:25 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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.

Intended Audie

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	4	HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3
CHEM 1319	1	MATH 1215	4

ENGLISH 1120	3	MECH ENG 1720	3
FR ENG 1100	1	PHYSICS 1135	4
MATH 1214 or 1211	4		
~~CHEM 1310~~	~~4~~		
MIN ENG 1912	2		
	16		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2200	3	MATH 3304	3
General Education Elective[1]	3	MECH ENG 2350	2
MATH 2222	4	MECH ENG 2527	3
MIN ENG 2925	2	MIN ENG 2412	3
MIN ENG 3912	2	PHYSICS 2135	4
MIN ENG 3913	3		
	17		15

Junior Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2210	3	ENGLISH 1160, or 3560, or SPM S 1185	3
ECON 3512[2]	3	MIN ENG 4512	3
GEOLOGY 3310	3	MIN ENG 5522	3
MIN ENG 5932	3	MIN ENG 5823	3
NUC ENG 3221 or CIV ENG 3330	3	MIN ENG 5933	3
STAT 3113	3		
	18		15

Senior Year

First Semester	Credits	Second Semester	Credits
General Education Elective[1]	3	General Education Elective[1]	3
MIN ENG 4096	3	MIN ENG 4097	3
MIN ENG 5113	3	MIN ENG 5742	3
MIN ENG 5612 or EXP ENG 5612	3	Technical Elective[3,4,5,6,7,8]	3
MIN ENG 5912	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.		
CIV ENG 3116	Construction Materials, Properties And Testing	3
MIN ENG 5212	Aggregates and Quarrying	3
MIN ENG 5412	Aggregates Materials Sizing and Characterization	3

Explosives Engineering Emphasis

Senior Year		
Courses have to be taken as technical electives.		
EXP ENG 5622	Blasting Design And Technology	3
MIN ENG 5823	Rock Mechanics	3
or EXP ENG 5922	Tunneling & Underground Construction Techniques	

Coal Emphasis

Senior Year		
MIN ENG 5322	Coal Mining Methods	3
~~MIN ENG 4414~~	~~Mine Plant Management (or approved substitute course.)~~	~~2~~
MIN ENG 5422	Coal Preparation	3

Mining and the Environment Emphasis

Senior Year		
GEO ENG 5233	Risk Assessment In Environmental Studies (or approved substitute course.)	3
GEO ENG 5235	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 Documents FS 2024 Course Change Requests.pdf

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: 04/16/26 9:08 am

Changes proposed by: David Lipke (lipked)

Catalog Pages Using this Program

Metallurgical Engineering

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	MT ENG-BS
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering
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 3:57 pm Hannah Johnson (hjh9x): Approved for Pending CCC

Agenda post
5. 04/15/26 3:11 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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)

Metallurgical Engineering BS

CIP Code 14.2001 - Metallurgical Engineering.

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
ENGLISH 1120	3	MECH ENG 1720	3
FR ENG 1100	1	MET ENG 2110[1]	3
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3	PHYSICS 1135[1]	4
MATH 1214 or 1211[1]	4		
	16		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2200[1]	3	CIV ENG 2210[1]	3
MATH 2222	4	~~ENGLISH 1160, or 3560, or SPM S 1185[7]~~	~~3~~
MET ENG 2125[1]	2	MATH 3304	3
MET ENG 3130[1]	3	MET ENG 3420 or MECH ENG 2653[1]	3

MET ENG 3230[1]	3	MET ENG 3425	1
		PHYSICS 2135	4
		Programming Elective[2]	3
	15		17

Junior Year

First Semester	Credits	Second Semester	Credits
ENGLISH 1160, or 3560, or SPM S 1185[8]	3	CER ENG 3410	3
General Education Elective[3]	3	~~STAT 3113~~	~~3~~
~~General Education Elective[2]~~	~~3~~	General Education Elective[3]	3
~~Free Elective~~	~~3~~	General Education Elective[3]	3
MET ENG 3120	3	MET ENG 3220	3
MET ENG 3125[1]	2	MET ENG 3225	1
~~MATH 3304~~	~~3~~	MET ENG 3320	3
Out of Department Technical Elective[4]	3		
STAT 3113 or 3117	3		
	17		16

Senior Year

First Semester	Credits	Second Semester	Credits
MET ENG 4096[1]	3	General Education Elective[3]	3
MET ENG 4350	3	MET ENG 4097	3
MET ENG 4420	3	MET ENG 4637	3
Met Technical Elective[7]	3	Met Technical Elective[7]	3
Steel Elective[6]	3	~~Met Technical Elective[6]~~	~~3~~
~~General Education Elective[2]~~	~~3~~	Out of Program Technical Elective[5]	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: 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.

Hannah Johnson (hjh9x) (04/16/26 9:08 am): Alphabetized the plan of study grid.

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: 03/31/26 12:07 pm

Changes proposed by: Mingzhen Wei (weim)

Catalog Pages Using this Program

Petroleum Engineering

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

Approval Path

1. 03/02/26 2:35 pm Stephen Gao (sgao): Approved for RGEOSENG 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 RGEOSENG 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 RGEOSENG 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 RGEOSENG 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
11. 04/15/26 3:11 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
12. 04/15/26 3:25 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

History

1. Sep 21, 2015 by Ralph Flori (reflori)
2. Jun 18, 2018 by Shari Dunn-Norman (caolila)

Rationale for Inactivation

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)

Supporting Documents

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
CIM Prospectus	
Academic Level	Undergraduate

Program Code	PE ENG-BS
Department	Earth Sciences and Engineering
Discipline	Petroleum Engineering

Offered by

Title

Petroleum Engineering BS

CIP Code	14.2501 - Petroleum Engineering.

Purpose

Intended Audience

Program-Specific Admission

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
CHEM 1100	1	COMP SCI 1500	3
CHEM 1305	4	~~PET ENG 2510~~	~~3~~
CHEM 1319	1	GEO ENG 1150 or GEOLOGY 1110	3
ENGLISH 1120	3	MATH 1215	4
~~PET ENG 1120~~	~~1~~	PET ENG 1120	1
FR ENG 1100	1	PHYSICS 1135	4
~~CHEM 1310~~[1]	~~4~~		
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3		
MATH 1214 or 1211[1]	4		
	17		15

Sophomore Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2200	3	CIV ENG 2210	3
General Education Elective[2]	3	General Education Elective[2]	3
MATH 2222	4	MATH 3304	3
PET ENG 3320	3	MECH ENG 2350	2
PHYSICS 2135	4	PET ENG 3330	3
		PET ENG 3520	3
	17		17

Junior Year

First Semester	Credits	Second Semester	Credits
CIV ENG 3330	3	ENGLISH 1160, or 1600, or 3560	3
CS Programming Elective[4]	3	General Education Elective[2]	3
GEOLOGY 3310	3	MECH ENG 2527	3
GEOLOGY 3319	1	PET ENG 4410	3
GEOLOGY 5513	3	PET ENG 4631	3
PET ENG 4210	3		
	16		15

Senior Year

First Semester	Credits	Second Semester	Credits
PET ENG 4520	3	GEO ENG 4115, or STAT 3113, or STAT 3117	3
PET ENG 4590	3	General Education Elective[2]	3
PET ENG 4720	3	PET ENG 4097	3
PET ENG 5801	3	PET ENG 4531	3
PET ENG Elective[3]	3	PET ENG 5050	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.

Hannah Johnson (hjh9x) (03/31/26 12:07 pm): Alphabetized the plan of study grid.

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 Edition	FS2026-SP2027
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

5. 04/15/26 3:12 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:25 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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

New Program Proposal

Date Submitted: 02/27/26 11:24 am

Viewing: PROPOSED : Biochemistry BS

Last edit: 03/31/26 1:50 pm

Changes proposed by: Pablo Sobrado (pszq5)

Effective Catalog Edition	FS2026-SP2027
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
7. 04/15/26 3:11 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
8. 04/15/26 3:26 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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
CHEM 1100	1	BIO SCI 1213	3
CHEM 1110	1	BIO SCI 1219	1
CHEM 1310	4	CHEM 1320	3
CHEM 1319	1	CHEM 4010	1
ENGLISH 1120	3	ENGLISH 1160 or SPM S 1185	3

MATH 1214 or 1210 ***and*** 1211	4	MATH 1215	4
	14		15

Sophomore Year

First Semester	Credits	Second Semester	Credits
BIO SCI 2213	3	CHEM 2220	3
BIO SCI 2219	1	CHEM 2229	1
CHEM 2210	3	CHEM 2510	4
CHEM 2219	1	General Education Elective[1]	3
COMP SCI 1973	2	PHYSICS 2145	4
COMP SCI 1983	1		
PHYSICS 1145	4		
	15		15

Junior Year

First Semester	Credits	Second Semester	Credits
CHEM 4610	3	BIO SCI 2223	3
CHEM 4619	2	CHEM 4620	3
General Education Elective[1]	3	General Education Elective[1]	3
General Elective	3	General Electives	6
STAT 3425	4		
	15		15

Senior Year

First Semester	Credits	Second Semester	Credits
CHEM 4099	1	BIO SCI 3313	3
CHEM 4630	3	CHEM 2410	3
General electives	9	CHEM 4650	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 Documents	Appendix A_Letters of Support.pdf 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

Hannah Johnson (hjh9x) (03/31/26 1:50 pm): Alphabetized the plan of study.

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 RENGMNGT 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
5. 04/15/26 3:12 pm

Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda

6. 04/15/26 3:25 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

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.

Key: 322

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
5. 04/15/26 3:04 pm

Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda

6. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair
7. 04/15/26 3:28 pm Evie Sherlock (esdk3): Approved for CAT entry

Indoor Environmental Quality

Experimental Abbreviated Course Title: Indoor Envir. Quality

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.

Key: 552

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

Agenda post

6. 04/15/26 3:04 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
7. 04/15/26 3:22 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair
8. 04/15/26 3:29 pm Evie Sherlock (esdk3): Approved for CAT entry

Marketing Strategies for Leaders

Experimental Abbreviated Course Title: MKT for LDR

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.

Key: 555

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
5. 04/15/26 3:05 pm

Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda

6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair
7. 04/15/26 3:29 pm Evie Sherlock (esdk3): Approved for CAT entry

Advanced German Literature

Experimental Abbreviated Course Title: Adv German Literature

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

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.

Key: 556

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

5. 04/15/26 3:05 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 04/15/26 3:24 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair
7. 04/15/26 3:29 pm Evie Sherlock (esdk3): Approved for CAT entry

Ballistic Theory

Experimental Abbreviated Course Title: Ballistic Theory

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.

Key: 557

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 (RPHILOSO)
Discipline	Philosophy (PHILOS)
Course Number	3001
Topic ID	011
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. 03/24/26 12:43 pm Irina Ivliyeva (ivliyeva): Approved for RPHILOSO 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
5. 04/15/26 3:05 pm

Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda

6. 04/15/26 3:25 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair
7. 04/15/26 3:36 pm Evie Sherlock (esdk3): Approved for CAT entry

Ethics of Artificial Intelligence

Experimental Abbreviated Course Title: Ethics of AI

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.

Key: 558

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
5. 04/15/26 3:05 pm Hannah Johnson (hjh9x): Approved

for CCC Meeting Agenda
6. 04/15/26 3:25 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair
7. 04/15/26 3:36 pm Evie Sherlock (esdk3): Approved for CAT entry

Computational Astrophysics

Experimental Abbreviated Course Title: Comp Astrophysics

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 *Fridays*	DSCC submission to Registrar *Fridays*	CCC Meeting *Tuesdays*	Faculty Senate Meeting *Thursdays*
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 *Fridays*	DSCC submission to Registrar *Fridays*	CCC Meeting *Tuesdays*	Faculty Senate Meeting *Thursdays*
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.