# Minutes of the Campus Curricula Committee Meeting

**August 11, 2026**
**8:15 am, Fulton Hall 120**
**(For Faculty Senate Meeting of September 17, 2026)**

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

*The following curriculum forms were discussed and approved:*

**Course Change forms:**

| | |
|---|---|
| File: 5506 | ARCH ENG 2103 : Architectural Materials And Methods of Construction |
| File: 10412 | ARCH ENG 5861 : Daylighting Design |
| File: 4290 | CHEM ENG 5250 : Isolation and Purification of Biologicals |
| File: 10415 | CHEM ENG 5290 : Energy Engineering |
| File: 10408 | ENGLISH 3238 : Vikings: Legends and Lives |
| File: 6440 | ENV ENG 5650 : Public Health Engineering |
| File: 4838 | ENV SCI 1110 : Terra Incognita: A First-Year ~~Environmental Science Freshman~~ Seminar for Environmental Science |
| File: 565 | ERP 5410 : Business Intelligence, Data Science, and AI ~~Use of Business Intelligence~~ |
| File: 4423 | GEOLOGY 4085 : Internship |
| File: 4424 | GEOLOGY 5085 : Internship |
| File: 4425 | GEOLOGY 6085 : Internship |
| File: 4103 | MATH 5604 : Introduction to Numerical Methods for Differential Equations |
| File: 8811 | MATH 6108 : Applied Matrix Theory |
| File: 4060 | MATH 6601 : Numerical Analysis |
| File: 2562 | PET ENG 4010 : Ethics and Professionalism |
| File: 10411 | SYS ENG 5106 : Verification Evaluation and Test |

**Program Change forms:**

| | |
|---|---|
| File: 17 | CHEM-MI : Chemistry Minor |
| File: 95 | MI ENG-BS : Mining Engineering BS |
| File: 123 | PRE-MED-MI : Pre-Medicine Minor |
| File: 140 | SYS ENG-MS : Systems Engineering MS |

**Experimental Course forms**:

| | |
|---|---|
| File: 569 | BIO SCI 3001.035 : Entomology |
| File: 570 | BIO SCI 6001.025 : Scientific Communication |
| File: 562 | CHEM ENG 5001.039 : Circular Economy and Bioeconomy |
| File: 566 | COMP SCI 6001.076 : Physical Artificial Intelligence for Humanoids |
| File: 567 | ELEC ENG 6001.059 : Power System Economics and Market |

File: 561 ENGLISH 3001.055 : Steampunk in Fiction and Culture
File: 564 ENGLISH 6001.002 : Media Technology and Humanity
File: 563 ENV SCI 5001.002 : Environmental Journalism
File: 559 MATH 5001.011 : Theoretical Foundations of Data Science II
File: 565 TCH COM 6001.003 : Foundations of Responsible AI Collaboration

*The following Course Change form was rolled back to the department:*
File: 10420 HISTORY 6470 : Advanced American Environmental History
File: 10421 PHILOS 5277 : Advanced Wilderness and its Critics
File: 10419 POL SCI 5300 : Advanced Principles of Public Policy

*The following Degree Change form was rolled back to the department:*
File: 440 PROPOSED : Environmental Policy

**New Business:**

- CCC Calendar 2026-2027
- Experimental Course Policy Review
- The CCC considered when courses on degree plans or certificates that were not an absolute requirement should be approved. The CCC unanimously agreed voting would be the process by which judgement calls would be made.
- It was raised that the process for approving graduate versions of undergraduate courses was laborious. This required creating an EC form, going through the appropriate number of rounds of teaching as an experimental course before being given a formal number. Chairman is to take up this issue with faculty senate.

The meeting adjourned at 8:56 am.

_____

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

# Course Change Request

Date Submitted: 04/10/26 11:32 am

## Viewing: ARCH ENG 2103 : Architectural Materials And Methods Of Construction

Last edit: 04/27/26 11:44 am

Changes proposed by: Stuart Baur (baur)

Programs referencing this course

ARC ENG-BS: Architectural Engineering BS

CON E&M-MI: Construction Engineering and Management Minor

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Civil Engineering (RCIVILEN) |
| Discipline | Architectural Engineering (ARCH ENG) |
| Course Number | 2103 |
| Title | Architectural Materials And Methods Of Construction |
| Abbreviated Course Title | Arch Mtrls & Mtds Const |
| 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. 04/23/26 10:56 am Subhas Venayagamoorthy (skv7d8): Approved for RCIVILEN Chair
2. 04/27/26 11:45 am Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 05/01/26 11:19 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 8:58 am Hannah Johnson (hjh9x): Approved

for Pending CCC Agenda post
5. 08/12/26 3:13 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:28 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

A study of the origin and properties of construction materials, methods of construction, and installation. Materials include mineral based, wood, steel, concrete, masonry, asphalt, and gypsum as components of architectural engineering.

Prerequisite(s):
Chem 1305 or ~~1310,~~ Chem 1310, Chem 1319 and Sophomore standing.

Corequisite(s):

## Credit Hours

Credit Hours

| Credit Type | Credit Hours |
|---|---|
| Lecture | 2 |
| Laboratory | 1 |

Total: 3

Required for Majors Yes ~~No~~

Elective for Majors No

Communication Intensive No

Communication Emphasized No

| | |
|---|---|
| Grading Basis | Graded |
| Repeatable | No |

Justification

Added Chem 1305 as a prerequisite

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (04/24/26 9:11 am):** Selected yes for required for majors, selected no for elective for majors per email from Stuart Baur. Selected no for CI and CE.

**Hannah Johnson (hjh9x) (04/24/26 9:16 am):** Changed effective date to Spring 2027 due to the deadline for Fall 2026 having already passed.

**Hannah Johnson (hjh9x) (04/27/26 11:44 am):** Added 'Chem' to 1310 in prereq.

Key: 5506

Preview Bridge

# Course Change Request

## New Course Proposal

Date Submitted: 04/23/26 10:50 am

## Viewing: ARCH ENG 5861 : Daylighting Design

### Last edit: 04/23/26 1:19 pm

Changes proposed by: Rachel Johnson (rj84p)

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Civil Engineering (RCIVILEN) |
| Discipline | Architectural Engineering (ARCH ENG) |
| Course Number | 5861 |
| Title | Daylighting Design |
| Abbreviated Course Title | Daylighting |
| 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. 04/23/26 10:56 am Subhas Venayagamoorthy (skv7d8): Approved for RCIVILEN Chair
2. 04/27/26 11:49 am Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 05/01/26 11:19 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 8:59 am Hannah Johnson (hjh9x): Approved

for Pending CCC Agenda post
5. 08/12/26 3:13 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:28 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

This course focuses on daylighting technologies and design. Students will use physical model techniques to test using a Heliodon and light meters along with computer techniques for modeling and simulations utilizing such software as the Revit plugin Insight for exploring qualities of daylight with some attention to an understanding of the physical and perceptual mechanisms that shape our experience of daylight.

Prerequisite(s):
Civ Eng 4448 or Arch Eng 4448, and junior standing.

Corequisite(s):

## Credit Hours

Credit Hours

| Credit Type | Credit Hours |
|---|---|
| Lecture | 2 |
| Laboratory | 1 |

Total: 3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

| | |
|---|---|
| Communication Emphasized | No |
| Grading Basis | Graded |
| Repeatable | No |

Justification

Course has been taught successfully for at least 3 semesters in the spring averaging 15 students per semester.

## Semesters Previously Offered

Term(s) Offered as experimental

Spring 24 and 17 students enrolled

Spring 25 and 17 students enrolled

Spring 26 and 11 students are enrolled

Previous Course Code

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (04/23/26 1:08 pm):** Selected graded for grading basis. Added terms offered and students enrolled as an EC. (Per email from Rachel F. Johnson)

**Hannah Johnson (hjh9x) (04/23/26 1:19 pm):** Edited CE/ArchE, in prereq to say "Civ Eng 4448 or Arch Eng 4448,"

Key: 10412

Preview Bridge

# Course Change Request

Date Submitted: 05/12/26 9:22 am

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

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

Last edit: 05/12/26 9:22 am

Changes proposed by: Christi Luks (luksc)

Programs referencing this course

- CH ENG-BS: Chemical Engineering BS
- CHEMPRO-CT: Chemical Process Engineering CT
- BIOMED-BS: Biomedical Engineering BS
- BIOENG-PHD: Bioengineering PhD

Other Courses referencing this course

### In The Catalog Prerequisites:

- BME 4091 : Biomedical Engineering Design I
- BME 6500 : Pharmaceutical Process Engineering
- CHEM ENG 4201 : Biochemical Separations and Control Laboratory
- CHEM ENG 5251 : Intermediate Bioseparations Laboratory

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Chemical and Biochemical Engineering (RCHEMENG) |
| Discipline | Chemical Engineering (CHEM ENG) |
| Course Number | 5250 |
| Title | |

### In Workflow

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

### Approval Path

1. 05/12/26 9:23 am Ryan Gilbert (rggnx): Approved for RCHEMENG Chair
2. 05/12/26 2:08 pm Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 05/18/26 2:16 pm Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 9:05 am Hannah Johnson (hjh9x): Approved

Isolation and Purification of Biologicals

Abbreviated Course Title: Iso and Purif of Biolog

Co-Listed Course:

Catalog Description

for Pending CCC Agenda post
5. 08/12/26 3:16 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:28 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. May 17, 2024 by Christi Luks (luksc)
4. Apr 21, 2026 by Christi Luks (luksc)

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

Prerequisite(s):

Preceded or accompanied by both Chem Eng 3131 ~~3131,~~ and Chem Eng 3141 or by BME 3100.

Corequisite(s):

## Credit Hours

Credit Hours

| Credit Type | 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 was poorly edited last time and inadvertently created prerequisites that were impossible for BME students to meet.

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

Key: 4290

Preview Bridge

# Course Change Request

## New Course Proposal

Date Submitted: 04/30/26 9:52 am

## Viewing: CHEM ENG 5290 : Energy Engineering

### Last edit: 04/30/26 1:49 pm

Changes proposed by: Christi Luks (luksc)

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Chemical and Biochemical Engineering (RCHEMENG) |
| Discipline | Chemical Engineering (CHEM ENG) |
| Course Number | 5290 |
| Title | Energy Engineering |
| Abbreviated Course Title | Energy Engineering |
| Co-Listed Course | |

Catalog Description

### In Workflow

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

### Approval Path

1. 04/30/26 9:54 am Ryan Gilbert (rggnx): Approved for RCHEMENG Chair
2. 05/01/26 10:16 am Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 05/11/26 11:10 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 9:06 am Hannah Johnson (hjh9x): Approved

for Pending CCC Agenda post
5. 08/12/26 3:16 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:28 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

An assessment of issues related to worldwide energy demand and the key engineering, environmental, industrial, governmental, and market concepts that drive decision making. Discussions of the life-cycle analysis of traditional and renewable energy sources such as fossil fuels, nuclear power, biomass, wind, solar, and geothermal.

Prerequisite(s):
Senior 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 has been taught as Chem Eng 5001 Topic ID 022 in Spring 2026 (23 enrolled) and Spring 2025 (24) and Spring 2024 (21 enrolled).

## Semesters Previously Offered

Term(s) Offered as experimental

This course has been taught as Chem Eng 5001 Topic ID 022 in Spring 2026 (23 enrolled) and Spring 2025 (24) and Spring 2024 (21 enrolled).

Previous Course Code

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (04/30/26 1:49 pm):** Selected graded for grading basis, added a period at the end of the prereq. Copied justification and added it to the terms offered as an EC box.

Key: 10415

Preview Bridge

# Course Change Request

## New Course Proposal

Date Submitted: 04/16/26 3:55 pm

## Viewing: ENGLISH 3238 : Vikings: Legends and Lives

Last edit: 04/27/26 3:56 pm

Changes proposed by: Eric Bryan (bryane)

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | English & Tech Communication (RENGLISH) |
| Discipline | English (ENGLISH) |
| Course Number | 3238 |
| Title | Vikings: Legends and Lives |
| Abbreviated Course Title | Vikings |
| 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. 04/16/26 9:22 pm Kathryn Dolan (dolankc): Approved for RENGLISH Chair
2. 04/29/26 8:52 am Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 07/20/26 12:19 pm Alejandra Sobrado (asgx4): Approved for Arts & Humanities DSCC Chair
4. 07/27/26 9:06 am Hannah Johnson (hjh9x): Approved

for Pending CCC Agenda post
5. 08/12/26 3:17 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

This course explores the literary and historical evidence for the lives, conquests, and customs of the Vikings and others of the medieval North during the Viking Age (roughly the eighth to the eleventh century), with special attention given to the Viking and Scandinavian presence in the British Isles.

Prerequisite(s):
English 1120.

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: Yes

| | |
|---|---|
| Grading Basis | Graded |
| Repeatable | No |

Justification

Institutional Justification:

This course meets the major requirements for (1) a 3000-level course with geographical designation and (2) a 3000-level course with historical or cultural designation; it will also contribute to the existing Undergraduate Certificate in Medieval and Renaissance Studies. Finally, the course makes an attractive offer to non-majors requiring upper-level humanities courses. The course has been taught three times as a 3000-level experimental 'special topics' class and has been at or near capacity each time.

Academic Justification:

Despite the ever-growing cultural interest in the Vikings—as evinced by the popular television show Vikings, the upcoming cinematic release of The Northmen, and, specific to the British Isles, Bernard Cornwell's novel (and subsequent television series) The Last Kingdom—the lives and literature of the Viking Age are poorly represented in the classroom. In courses on British literature, in particular, it is rarely more than mentioned that England and portions of Ireland and Scotland were at times ruled by Scandinavians during the Viking Age, or that Scandinavians (generically referred to as "Danes") occupied more than half of England for better than two centuries, or that the Anglo-Saxon king Alfred the Great is called "the Great" because he defeated the seemingly invincible Danish (sometimes called "Viking") army that held much of the north of England, or that mere weeks before the defining moment in medieval English history (William the Conqueror's victory over Harald Godwinson of England), King Harold defeated one of the greatest sea-going Scandinavian armies of the Viking age (if events were reversed, we could easily be speaking a version of Norwegian). Yet the Vikings are there to be found, in life and literature, if we are willing to look for them.

If the scholarly, higher-educational community is willing to ignore the Vikings, popular culture clearly is not. This lack of coverage in the classroom has become rather a problem, especially in the United States. Because of the real-life Viking brutality, the word 'Viking' (Old Norse víkingr, Old English wīcing) was never uttered in the medieval period with anything other than scorn and fear. Not until the eighteenth- and nineteenth-century romanticization of the ancient past were the Vikings elevated to the status of heroes and demigods. Nowadays, the romanticized Viking mentality—a sense of adventure, a disregard for authority, and a certain kind of reckless courage—has placed the Vikings in the company of the Pirates of the Caribbean and the gunslingers of the American Wild West. So much may be innocent, but (often erroneously labeled) 'Viking' symbols and identities have made their way into extremists, typically far-right

imaginations, to say nothing of the contributions of the romanticization of the North to nationalism and the Nazi identity of the twentieth century.

A correction of sorts is needed: Who were the Vikings, really? Where they anything more than seagoing murderers and thieves? Did they live according to a heroic ethic or merely a bloodthirsty one? And what status ought they hold in our modern cultural memory? This course enables students to answer these questions with particular focus on the Vikings in the British Isles because here, in the United States, we have inherited a predominately (though not wholly) British popular memory of the Vikings.

## Semesters Previously Offered

Term(s) Offered as experimental

Spring 2023 - 21 students, Spring 2024 - 19 students, and Spring 2026 - 18 students.

Previous Course Code

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (04/20/26 8:05 am):** Added a period after the prereq. Selected graded for grading basis, and added EC semesters taught based on email from Eric Bryan

**Hannah Johnson (hjh9x) (04/20/26 9:09 am):** Added number of students in each semester as an EC course from Eric Bryan.

**Hannah Johnson (hjh9x) (04/20/26 3:36 pm):** Removed English from the course number.

**Hannah Johnson (hjh9x) (04/27/26 3:56 pm):** Selected no for CI per email from Eric Bryan.

Key: 10408

Preview Bridge

# Course Change Request

Date Submitted: 06/08/26 3:54 pm

## Viewing: ENV ENG 5650 : Public Health Engineering

## Also listed as: CIV ENG 5650

Last edit: 06/08/26 4:05 pm

Changes proposed by: Jody Seely (seelyj)

Programs referencing this course

**CIV ENG 5650:**

CV ENG-BS: Civil Engineering BS

GEOENV-CT: Geoenvironmental Eng CT

WATERSC-MS: Water Science and Engineering MS

ENV SCI-BS: Environmental Science BS

**ENV ENG 5650:**

ENV SCI-BS: Environmental Science BS

ES&P-CTU: Environmental Policy and Sustainability CTU

PROPOSED: Environmental Health & Safety CT

EV ENG-BS: Environmental Engineering BS

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Civil Engineering (RCIVILEN) |
| Discipline | Environmental Engineering (ENV ENG) |
| Course Number | 5650 |
| Title | Public Health Engineering |
| Abbreviated Course Title | Public Health Engr |

### 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. 06/08/26 3:59 pm Subhas Venayagamoorthy (skv7d8): Approved for RCIVILEN Chair
2. 06/12/26 3:09 pm Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 06/30/26 11:13 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 9:06 am Hannah Johnson (hjh9x): Approved

| | | | |
|---|---|---|---|
| Co-Listed Course | CIV ENG 5650 | Department | Civil Engineering (RCIVILEN) |

Catalog Description

A comprehensive course dealing with the environmental aspects of public health.

Prerequisite(s):

Env Eng 2601 or Civ Eng 2601 ~~Eng 2601~~ with grade of "C" or ~~or~~ better.

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

for Pending CCC Agenda post

5. 08/12/26 3:27 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

Justification

adding co-listed prerequisite so stellic pulls correctly

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (06/08/26 4:05 pm):** Changed effective date to Spring 2027. Added the numbers to ENV ENG 2601, selected no for CI and CE.

Key: 6440

Preview Bridge

# Course Change Request

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

## Viewing: ENV SCI 1110 : Terra Incognita: A First-Year ~~Environmental Science Freshman~~ Seminar for Environmental Science

Last approved: 02/07/22 6:01 am

Last edit: 08/11/26 11:00 am

Changes proposed by: Robin Verble (verbler)

Programs referencing this course

ENV SCI-BS: Environmental Science BS

| | |
|---|---|
| Requested Effective Date | Fall 2027 |
| Department | Biological Sciences (RBIOLSCI) |
| Discipline | Environmental Sciences (ENV SCI) |
| Course Number | 1110 |
| Title | Terra Incognita: A First-Year ~~Environmental Science Freshman~~ Seminar for Environmental Science |
| Abbreviated Course Title | Env Sci Fresh Sem |
| Co-Listed Course | |

Catalog Description

### In Workflow

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

### Approval Path

1. 05/12/26 12:58 pm Gina Yosten (gyxmr): Approved for RBIOLSCI Chair
2. 06/22/26 3:42 pm Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 07/23/26 5:55 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 07/27/26 9:09 am Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post

5. 08/12/26 3:27 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Feb 7, 2022 by Katie Shannon (shannonk)

This course introduces first-year Environmental Science majors ~~An introduction~~ to the interdisciplinary nature ~~study~~ of environmental studies while supporting their transition to college life ~~science~~ at Missouri S&T.

Through discussions, guest speakers, campus and field experiences, and collaborative activities, students will explore how scientific, social, political, economic, and cultural perspectives intersect in addressing environmental challenges. The seminar emphasizes critical thinking, curiosity, and problem-solving while helping students develop academic skills, professional identity, and connections within the Environmental Science community. Students will engage ~~become acquainted~~ with contemporary environmental issues, learn about campus ~~faculty, facilities, and~~ resources and opportunities, and begin building ~~associated with~~ the communication and collaborative skills necessary for success in environmental fields. ~~environmental science program at S&T. Students will also consider opportunities for personal and professional development in environmental sciences.~~

Prerequisite(s):

Environmental Science majors only.

Corequisite(s):

**Credit Hours**

Credit Hours

| Credit Type | Credit Hours |
|---|---|
| Recitation/Seminar/Discussion | 1 |

Total: 1

Required for Majors: Yes

Elective for Majors: No

Communication Intensive: No

Communication Emphasized: No

Grading Basis: Graded

Repeatable: No

Justification

Recent faculty additions to our program bring new expertise in environmental studies which can be maximally utilized in a course that provides opportunities for critical thinking and exploration of the environmental-social dimensions. Additionally, the course title reflects both the uncharted territory of college (as students take the course as entering freshman) but also the new perspectives that interdisciplinary scholarship brings.

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (05/12/26 1:15 pm):** Added period back to the end of the prereq.

**Hannah Johnson (hjh9x) (06/17/26 1:30 pm):** Selected no for CI and CE per email from Robin Verble.

**Hannah Johnson (hjh9x) (06/22/26 3:41 pm):** Change in description is elaborating on what they are teaching in the course and is not changing by more than 50%.

**Hannah Johnson (hjh9x) (08/11/26 11:00 am):** Added: A First-Year Seminar for Environmental Science, to the title with approval from Robin Verble and the CCC meeting conducted on Aug 11, 2026.

Key: 4838

Preview Bridge

# Course Change Request

Date Submitted: 04/12/26 8:53 am

## Viewing: ERP 5410 : Business Intelligence, Data Science, and AI ~~Use of Business Intelligence~~

Last approved: 09/12/24 6:03 am

Last edit: 04/29/26 8:55 am

Changes proposed by: Cecil Eng Huang Chua (cecq8z)

Programs referencing this course

- AI-MI: Minor in Artificial Intelligence and Machine Learning in Business
- FIN TCH-MI: Minor in Financial Technology, Analytics and Transformation
- ANA&DTA-CT: Bus Analytics & Data Sci CT
- DATA WR-CT: Business Intelligence CT
- DSCMGMT-CT: Digital Supply Chain Mgmt CT
- ERP-CT: Enterprise Resource Plan CT
- DATMGTA-CT: Big Data Mgmt and Analytics CT
- DSCMGMT-MI: Digital Supply Chain Mgt Minor
- IS&T-MS: Info Science & Tech MS

Other Courses referencing this course

### In The Catalog Prerequisites:

- ERP 6220 : Data Modeling & Visualization Prototyping for Enterprise Decision Dashboard
- IS&T 6443 : Information Retrieval and Analysis

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Jaggi School of Business (RBUS&IT) |

### 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. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. CAT entry
11. Peoplesoft

### Approval Path

1. 04/24/26 3:23 pm Cassie Elrod (cassa): Approved for RBUS&IT Chair
2. 04/29/26 8:56 am Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 04/29/26 12:07 pm Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
4. 07/27/26 9:10 am Hannah Johnson (hjh9x): Approved for Pending CCC

| | |
|---|---|
| Discipline | Enterprise Resource Planning (ERP) |
| Course Number | 5410 |
| Title | Business Intelligence, Data Science, and AI ~~Use of Business Intelligence~~ |
| Abbreviated Course Title | Bus. Intel, Data Sci, and AI ~~Use of Business Intel~~ |
| Co-Listed Course | |

Catalog Description

Agenda post

5. 08/12/26 3:27 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Nov 20, 2017 by barryf
2. Aug 24, 2018 by ershenb
3. Oct 29, 2018 by barryf
4. Sep 12, 2024 by Crystal Wilson (wilsoncry)

This course introduces data-oriented techniques for business intelligence. Topics include Business Intelligence Architecture, ~~architecture,~~ Business Analytics, Enterprise Reporting and their Applications in AI. ~~Enterprise Reporting.~~ SAP Business Information Warehouse, SAP Analytics Cloud, ~~Business Objects,~~ or similar tools will be used to access and present data, generate reports, and perform hands-on analysis.

Prerequisite(s):

IS&T 1750 or equivalent.

Corequisite(s):

## Credit Hours

Credit Hours

| Credit Type | Credit Hours |
|---|---|

| Credit Type | Credit Hours |
|---|---|
| Lecture | 3 |

Total: 3

Required for Majors: No

Elective for Majors: Yes

Communication Intensive: No

Communication Emphasized: No

Grading Basis: Graded

Repeatable: No

Justification

Some new AI-related content (such as a chapter in AI-based Trends in Analytics and Data Science) was added to the teaching material to align with the university's AI focus.

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (04/27/26 12:08 pm):** Removed prereq information from the course description.

**Hannah Johnson (hjh9x) (04/27/26 2:58 pm):** Not changing by more than 50%, per email from Cecil Chua. Changed effective date to Spring 2027.

**Hannah Johnson (hjh9x) (04/29/26 8:55 am):** Capitalized the A in Architecture and in Applications in the description.

Key: 565

Preview Bridge

# Course Change Request

Date Submitted: 04/27/26 9:42 am

## Viewing: GEOLOGY 4085 : Internship

### Last approved: 10/11/17 3:29 am

### Last edit: 04/27/26 9:42 am

Changes proposed by: Kelly Liu (liukh)

Programs referencing this course

ENV SCI-BS: Environmental Science BS

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Earth Sciences and Engineering (RGEOSENG) |
| Discipline | Geology (GEOLOGY) |
| Course Number | 4085 |
| Title | Internship |
| Abbreviated Course Title | Internship |
| 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. 04/27/26 9:45 am Stephen Gao (sgao): Approved for RGEOSENG Chair
2. 04/27/26 12:16 pm Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 05/01/26 11:19 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 9:10 am Hannah Johnson (hjh9x): Approved for Pending CCC

Agenda post
5. 08/12/26 3:17 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Oct 11, 2017 by John Hogan (jhogan)

Students will select, with the advice of their advisor, appropriate problems for investigation through practical application of fundamental geoscience principles. The problems selected must provide higher level experiential learning. Assessment is based upon the quality of written and oral presentations and supervisor's evaluation.

Prerequisite(s):
Advisor's approval.

Corequisite(s):

### Credit Hours

Credit Hours

| Credit Type | Credit Hours |
|---|---|
| Independent Study | 1-15 ~~3~~ |

Total: 1-15 ~~3~~

Required for Majors No

Elective for Majors Yes

| | |
|---|---|
| Communication Intensive | No |
| Communication Emphasized | No |
| Grading Basis | Graded |
| Repeatable | No |

Justification

The credit hours are being changed to variable to provide flexibility, allowing credit to more accurately reflect the time commitment and complexity of student work.

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

Key: 4423

Preview Bridge

# Course Change Request

Date Submitted: 04/27/26 9:43 am

## Viewing: GEOLOGY 5085 : Internship

### Last approved: 07/31/24 6:06 am

### Last edit: 04/27/26 12:17 pm

Changes proposed by: Kelly Liu (liukh)

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Earth Sciences and Engineering (RGEOSENG) |
| Discipline | Geology (GEOLOGY) |
| Course Number | 5085 |
| Title<br>Internship | |
| Abbreviated Course Title | Internship |
| 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. 04/27/26 9:45 am Stephen Gao (sgao): Approved for RGEOSENG Chair
2. 04/27/26 12:18 pm Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 05/01/26 11:19 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 9:10 am Hannah Johnson (hjh9x): Approved for Pending CCC

Agenda post
5. 08/12/26 3:17 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Oct 11, 2017 by John Hogan (jhogan)
2. Jul 31, 2024 by jm558v

Students will select, with their committee's advice, problems for investigation and preparation of a graduate research proposal. Problems must provide higher level experiential learning consistent with a graduate degree in geology. Assessment is based upon the quality of written and oral presentations and supervisor's evaluation. Repeatable for credit.

Prerequisite(s):

Graduate standing. ~~Standing.~~

Corequisite(s):

### Credit Hours

Credit Hours

| Credit Type | Credit Hours |
|---|---|
| Independent Study | 1-15 ~~3~~ |

Total: 1-15 ~~3~~

Required for Majors No

| | |
|---|---|
| Elective for Majors | Yes ~~No~~ |
| Communication Intensive | No |
| Communication Emphasized | No |
| Grading Basis | Graded |
| Repeatable | Yes |

Justification

The credit hours are being changed to variable to provide flexibility, allowing credit to more accurately reflect the time commitment and complexity of student work.

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (04/27/26 12:17 pm):** Placed lowercase s in standing for prereq.

Key: 4424

Preview Bridge

# Course Change Request

Date Submitted: 04/27/26 9:43 am

## Viewing: GEOLOGY 6085 : Internship

### Last approved: 07/31/24 6:06 am

### Last edit: 04/27/26 9:43 am

Changes proposed by: Kelly Liu (liukh)

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Earth Sciences and Engineering (RGEOSENG) |
| Discipline | Geology (GEOLOGY) |
| Course Number | 6085 |
| Title<br>Internship | |
| Abbreviated Course Title | Internship |
| 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. 04/27/26 9:45 am Stephen Gao (sgao): Approved for RGEOSENG Chair
2. 04/27/26 12:19 pm Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 05/01/26 11:19 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 9:10 am Hannah Johnson (hjh9x): Approved for Pending CCC

Agenda post
5. 08/12/26 3:17 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Oct 11, 2017 by John Hogan (jhogan)
2. Jul 31, 2024 by jm558v

Students will select, with their committee's advice, problems for investigation and preparation of a graduate research proposal. Problems must provide higher level experiential learning consistent with a graduate degree in geology. Assessment is based upon the quality of written and oral presentations and supervisor's evaluation. Repeatable for credit.

Prerequisite(s):
Graduate standing.

Corequisite(s):

### Credit Hours

Credit Hours

| Credit Type | Credit Hours |
|---|---|
| Independent Study | 1-15 ~~3~~ |

Total: 1-15 ~~3~~

Required for Majors No

| | |
|---|---|
| Elective for Majors | No |
| Communication Intensive | No |
| Communication Emphasized | No |
| Grading Basis | Graded |
| Repeatable | Yes |

Justification

The credit hours are being changed to variable to provide flexibility, allowing credit to more accurately reflect the time commitment and complexity of student work.

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

Key: 4425

Preview Bridge

# Course Change Request

Date Submitted: 05/01/26 2:34 pm

## Viewing: MATH 5604 : Introduction to Numerical Methods for Differential Equations

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

Last edit: 07/13/26 10:45 am

Changes proposed by: Qingguo Hong (qh5k5)

Programs referencing this course

AP MATH-BS: Applied Mathematics BS

PROPOSED: Data Science BS

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Mathematics & Statistics (RMATHEMA) |
| Discipline | Mathematics (MATH) |
| Course Number | 5604 |
| Title | Introduction to Numerical Methods for Differential Equations |
| Abbreviated Course Title | Numerical Diff Eqns |
| Co-Listed Course | |

Catalog Description

### In Workflow

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

### Approval Path

1. 07/08/26 1:43 pm John Singler (singlerj): Approved for RMATHEMA Chair
2. 07/13/26 10:45 am Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 07/23/26 5:59 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 07/27/26 9:11 am Hannah Johnson (hjh9x): Approved

for Pending CCC Agenda post
5. 08/12/26 3:27 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Nov 3, 2014 by imorgan
2. Feb 21, 2022 by Paul Runnion (prunnion)

An introduction to finite difference methods for ordinary and partial differential equations, including (1) the derivation of the numerical methods, (2) implementation of the methods in Matlab, and (3) the mathematical accuracy and stability analysis of the methods.

Prerequisite(s):

A grade of "C" or better in Math 2222, ~~2222 and~~ Math 3304, and Math 5601. ~~3304; programming competency (preferably Matlab).~~

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

We need the students know the polynomial interpolation in Math 5601 to derive the numerical methods. We need the students know Newton's method in Math 5601 to implement the numerical methods such as backward Euler's method.

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (05/01/26 3:01 pm):** Changed effective date to Spring 2027 per CCC deadlines.

Key: 4103

Preview Bridge

# Course Change Request

Date Submitted: 07/08/26 1:56 pm

## Viewing: MATH 6108 : Applied Matrix Theory

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

### Last edit: 07/08/26 1:56 pm

Changes proposed by: John Singler (singlerj)

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Mathematics & Statistics (RMATHEMA) |
| Discipline | Mathematics (MATH) |
| Course Number | 6108 |
| Title | Applied Matrix Theory |
| Abbreviated Course Title | Applied Matrix Theory |
| Co-Listed Course | |

Catalog Description

## In Workflow

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

## Approval Path

1. 07/08/26 1:56 pm John Singler (singlerj): Approved for RMATHEMA Chair
2. 07/13/26 10:54 am Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 07/23/26 5:59 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 07/27/26 9:11 am Hannah Johnson (hjh9x): Approved

for Pending CCC Agenda post
5. 08/12/26 3:27 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Dec 25, 2025 by Crystal Wilson (wilsoncry)

A second course in matrix theory directed toward applications. Linear spaces, linear operators, equivalence and similarity, spectral theorem, canonical forms, congruence, inertia theorem, quadratic forms, singular value decomposition and other factorizations, generalized inverses. Applications to optimization, differential equations, stability.

Prerequisite(s):

Math 3108 and ~~or~~ Math 4209. ~~5302.~~

Corequisite(s):

### Credit Hours

Credit Hours

| Credit Type | Credit Hours |
|---|---|
| Lecture | 3 |

Total: 3

Required for Majors No

Elective for Majors No

| | |
|---|---|
| Communication Intensive | No |
| Communication Emphasized | No |
| Grading Basis | Graded |
| Repeatable | No |

Justification

MATH 6108 is a rigorous, proof-based graduate course. To be successful, students must have prior experience with writing and understanding mathematical proofs. Adding MATH 4209 (Advanced Calculus I) as a prerequisite will help ensure that students are adequately prepared for the level of rigor expected in this course, while still aligning with the course's intended content. MATH 5302 did not help with this proof preparation and is not needed.

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

Key: 8811

Preview Bridge

# Course Change Request

Date Submitted: 05/01/26 2:42 pm

## Viewing: MATH 6601 : Numerical Analysis

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

Last edit: 07/13/26 10:54 am

Changes proposed by: Qingguo Hong (qh5k5)

Other Courses referencing this course

In The Catalog Prerequisites:

MATH 6603 : Mathematical Foundations of Finite Element Methods II

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Mathematics & Statistics (RMATHEMA) |
| Discipline | Mathematics (MATH) |
| Course Number | 6601 |
| Title | Numerical Analysis |
| Abbreviated Course Title | Numerical Analysis |
| Co-Listed Course | |

Catalog Description

### In Workflow

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

### Approval Path

1. 07/08/26 1:43 pm John Singler (singlerj): Approved for RMATHEMA Chair
2. 07/13/26 10:55 am Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 07/23/26 5:59 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 07/27/26 9:11 am Hannah Johnson (hjh9x): Approved

for Pending CCC Agenda post
5. 08/12/26 3:28 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Jul 7, 2014 by imorgan

A proof based course emphasizing theoretical analysis of convergence and accuracy of various numerical methods including approximate solutions of linear and nonlinear equations, numerical integration, and function approximation, with implementation to validate results and illustrate the methods.

Prerequisite(s):

Math 5601. ~~Any 4000 or higher level MATH course, or any instructor approved 4000 or higher level course from another discipline with a significant computational component.~~

Corequisite(s):

### Credit Hours

Credit Hours

| Credit Type | Credit Hours |
|---|---|
| Lecture | 3 |

Total: 3

Required for Majors No

Elective for Majors No

| | |
|---|---|
| Communication Intensive | No |
| Communication Emphasized | No |
| Grading Basis | Graded |
| Repeatable | No |

Justification

The course Math 6601 is a deeper numerical analysis course based on Math 5601. For example, we will talk about the modified Newton's method and related convergence analysis which requires the students know the Newton's method in Math 5601. We will also talk about spline approximation in Math 6601 which hopes the students know polynomial interpolation in Math 5601. We will talk about CG method in Math 6601 which hopes the students know some direct method and iterative methods for linear system from Math 5601.

## Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (05/01/26 3:01 pm):** Changed effective date to Spring 2027 per CCC deadlines.

**Hannah Johnson (hjh9x) (07/08/26 2:05 pm):** Added a period after the prereq.

Key: 4060

Preview Bridge

# Course Change Request

## New Course Proposal

Date Submitted: 04/21/26 1:01 pm

## Viewing: SYS ENG 5106 : Verification Evaluation and Test

Last edit: 08/11/26 11:21 am

Changes proposed by: Cihan Dagli (dagli)

Programs referencing this course

SYS ENG-MS: Systems Engineering MS

| | |
|---|---|
| Requested Effective Date | Spring 2027 |
| Department | Engineering Mgt & Sys Engr (RENGMNGT) |
| Discipline | Systems Engineering (SYS ENG) |
| Course Number | 5106 |
| Title | Verification Evaluation and Test |
| Abbreviated Course Title | Verification Evaluation Test |
| Co-Listed Course | |

Catalog Description

### In Workflow

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

### Approval Path

1. 04/21/26 1:15 pm Amaury Lendasse (altmg): Approved for RENGMNGT Chair
2. 05/05/26 11:54 am Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 05/12/26 9:51 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 9:05 am Hannah Johnson (hjh9x): Approved

for Pending CCC Agenda post
5. 08/12/26 3:28 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

Introduction to systems engineering techniques and relevant regulatory regimes for performing verification, evaluation and testing on products across several industries. These include military and civil avionics, aircraft, medical devices, pharmaceuticals, and others. Topics covered are verification methods, interpretation applicable documents in specification and data items in contract documents, describing environmental qualification conditions in regulations, analyzing to tailor and flow down verification requirements to suppliers, understanding how to make a verification or certification case to various regulatory agencies.

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 Yes

| | |
|---|---|
| Communication Emphasized | No |
| Grading Basis | Graded |
| Repeatable | No |

Justification

Systems Engineering MS graduate program review by The Boeing Company and International Council of Systems Engineering INCOSE that recognizes our academic programs as an alternative to the INCOSE knowledge exam as a way for individuals to prove their systems engineering knowledge while they are being considered for becoming an Associate Systems Engineering Professional (ASEP) or Certified Systems Engineering Professional (CSEP) advised us to add a course on Verification Evaluation and Test to our core courses.

## Semesters Previously Offered

Term(s) Offered as experimental

Previous Course Code

Is this a MOTR Course?

Reviewer Comments

**Hannah Johnson (hjh9x) (04/22/26 8:27 am):** Selected no for required for majors, selected yes for elective for majors, selected yes for CI and no for CE, and selected graded for grading basis per email from Cihan Dagli.

**Hannah Johnson (hjh9x) (05/04/26 9:29 am):** Added graduate standing as the prereq, per email from Cihan Dagli.

**Hannah Johnson (hjh9x) (08/11/26 11:21 am):** Edited 'Verification, Evaluation and Test' in the catalog description to say 'verification, evaluation and testing' for proper grammar and punctuation.

# Program Change Request

Date Submitted: 03/06/26 9:32 am

## Viewing: CHEM-MI : Chemistry Minor

Last approved: 12/03/19 4:24 pm

Last edit: 04/29/26 8:30 am

Changes proposed by: Crystal Wilson (wilsoncry)

Catalog Pages Using this Program

Chemistry

| | |
|---|---|
| Effective Catalog Edition | FS2027-SP2028 |
| Start Term | Fall 2027 |
| Program Type | Minor |
| Academic Level | Undergraduate |
| Program Code | CHEM-MI |
| 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. 03/06/26 9:34 am Chariklia Sotiriou-Leventis (cslevent): Approved for RCHEMIST Chair
2. 03/09/26 10:07 am Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 03/19/26 11:20 am Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 03/30/26 2:17 pm Hannah Johnson (hjh9x): Rollback to RCHEMIST Chair for Pending CCC Agenda post

5. 04/16/26 3:27 pm Chariklia Sotiriou-Leventis (cslevent): Approved for RCHEMIST Chair
6. 04/29/26 8:34 am Hannah Johnson (hjh9x): Approved for CCC Secretary
7. 07/23/26 5:55 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
8. 07/27/26 9:03 am Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post
9. 08/12/26 3:15 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
10. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Apr 28, 2014 by Thomas Schuman (tschuman)
2. Jun 27, 2016 by Klaus Woelk (woelkk)
3. Dec 3, 2019 by Thomas Schuman

(tschuman)

Chemistry Minor

CIP Code

Program Requirements and Description

# Minor in Chemistry

A minor in chemistry requires a minimum of 18 hours of chemistry course work. ~~work selected in conjunction with a chemistry faculty advisor.~~ The required courses are CHEM 1100, CHEM 1310, CHEM 1319, CHEM 1320, and CHEM 2210. ~~The required courses are CHEM 1100 , CHEM 1310 , CHEM 1319 , CHEM 1320 , CHEM 2210 and either CHEM 2219 or CHEM 2289.Five additional hours of chemistry are to be selected from CHEM 1510 or other Chem 2000, 3000, and 4000-levelcourses.~~ Six additional hours are to be selected from chemistry courses numbered 3000 level or above. A ~~A~~ minimum grade of "C" is required for each course counted toward the minor. A maximum ~~Five additional hours~~ of 6 credit hours of transfer credit may ~~chemistry are to~~ be used to satisfy the course requirements.
~~selected from CHEM 1510 or other Chem 2000, 3000, and 4000-level courses.~~

Justification for request

Removed Chem 2289 per department request as the course is no longer offered and has been hidden in the catalog.

Attach Budget

System Approval Letter

MDHE Approval

Supporting Documents

Reviewer Comments

**Hannah Johnson (hjh9x) (03/30/26 2:17 pm):** Rollback: Rolling back to adjust to meet minor requirements.

**Hannah Johnson (hjh9x) (04/03/26 1:11 pm):** Added the six credit hours numbered at 3000 level or above, and added that a max of 6 credit hours can be transferred in. Rearranged per email from Paul Nam.

**Hannah Johnson (hjh9x) (04/29/26 8:30 am):** Changed effective date and term to Fall 2027.

# Program Change Request

Date Submitted: 06/24/26 6:09 pm

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

Last approved: 06/17/26 11:42 am

Last edit: 07/08/26 3:25 pm

Changes proposed by: Stephen Casey (caseysc)

| | |
|---|---|
| Catalog Pages Using this Program | Mining Engineering |
| Final Catalog | FS2027-SP2028 |
| Rationale for Inactivation | |
| Supporting Documents | |
| Effective Catalog Edition | FS2027-SP2028 |
| Start Term | Fall 2027 |
| Program Type | Bachelor of Science |

### 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. 07/08/26 9:45 am Kwame Awuah-Offei (kabp3): Approved for RMINENG Chair
2. 07/08/26 3:44 pm Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 07/19/26 9:43 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 9:03 am Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post
5. 08/12/26 3:15 pm Hannah Johnson

CIM Prospectus

| | |
|---|---|
| Academic Level | Undergraduate |
| Program Code | MI ENG-BS |
| Department | Mining and Explosives Engineering |
| Discipline | Mining Engineering |

(hjh9x): Approved for CCC Meeting Agenda

6. 08/12/26 3:29 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

Offered by

Title

(caseysc)

12. Dec 24, 2025 by Crystal Wilson (wilsoncry)
13. Jun 2, 2026 by Stephen Casey (caseysc)
14. Jun 8, 2026 by Hannah Johnson (hjh9x)
15. Jun 8, 2026 by Hannah Johnson (hjh9x)
16. Jun 17, 2026 by Crystal Wilson (wilsoncry)

Mining Engineering BS

CIP Code 14.2101 - Mining and Mineral Engineering.

Purpose

Intended Audience

Program-Specific Admission

Program Requirements and Description

# Bachelor of Science

# Mining Engineering

The Mining Engineering program at Missouri S&T is characterized by its focus on the scientific basics of engineering and its innovative application to the extraction of (critical) minerals to meet societal needs. Indeed, the underlying theme of this educational program is the application of basic science to engineering practice by solving engineering problems related to mineral extraction. These problems include the safe and sustainable extraction of minerals to power green energy. The necessary interrelations among the various topics, the engineering disciplines, and the other professions as they naturally come together in the solution of real-world problems are emphasized as research, analysis, synthesis, and design are presented and discussed through classroom and laboratory instruction.

Incoming students who state the Mining Engineering preference are required to complete MIN ENG 1912 during the first or second semester on campus.

For the Bachelor of Science degree in Mining Engineering a minimum of 128 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. A student must maintain at least two grade points per credit hour for all courses taken in the student's major department, and an average of at least two grade points per credit hour must be maintained in Mining Engineering.

The Mining Engineering program must meet Missouri S&T general education requirements as stipulated in the catalog.

Freshman Year

| First Semester | Credits | Second Semester | Credits |
|---|---|---|---|
| CHEM 1100 | 1 | GEO ENG 1150 | 3 |
| CHEM 1305 | 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 | | |
| 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 |
| ECON 1100 or 1200[2] | 3 | MECH ENG 2527 | 3 |
| MATH 2222 | 4 | MIN ENG 2412 | 3 |
| MIN ENG 2925 | 2 | PHYSICS 2135 | 4 |
| MIN ENG 3912 | 2 | | |
| 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**

**Coal Emphasis:** MIN ENG 5322, MIN ENG 5422 or an approved substitute course must be taken as a Technical Electives.

**4**

**Explosives Engineering Emphasis:** EXP ENG 5622 and MIN ENG 5823 or EXP ENG 5922 have to be taken as Technical Electives.

**5**

**Mining and the Environment Emphasis:** GEO ENG 5233 and GEO ENG 5235, or approved substitute courses have to be taken as Technical Electives.

**6**

**Mining Health and Safety Emphasis:** ENG MGT 4330, MIN ENG 3002, or other approved substitute courses must be taken as Technical Electives.

**7**

**Quarrying Engineering Emphasis:** Two of the following courses have to be taken as Technical Electives: CIV ENG 3116, MIN ENG 5212, MIN ENG 5412.

**8**

**Sustainable Development Emphasis:** ECON 4440, POL SCI 3310, 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.

# Coal Emphasis

| | | |
|---|---|---|
| **Senior Year** | | |
| MIN ENG 5322 | Coal Mining Methods (or approved substitute course.) | 3 |
| MIN ENG 5422 | Coal Preparation (or approved substitute course.) | 3 |

# Explosives Engineering Emphasis

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

# 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 |

# 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 |

# 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 |

## 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 |

Justification for request

Change Gen Ed in First Semester Sophomore year to ECON 1100 or ECON 1200, as these courses are prerequisite for ECON/MIN ENG 3512 in First Semester Junior Year.

Attach Budget

System Approval Letter

MDHE Approval

Supporting Documents FS 2024 Course Change Requests.pdf

Reviewer Comments

**Hannah Johnson (hjh9x) (07/08/26 1:52 pm):** Removed the title from the course listed in footnote 6.

**Hannah Johnson (hjh9x) (07/08/26 2:49 pm):** Added 'or approved substitute course.' to the courses listed in Emphasis areas of Coal and Mining and the Environment.

**Hannah Johnson (hjh9x) (07/08/26 3:25 pm):** Removed the line 'courses have to be taken as technical electives' from the Explosives Engineering Emphasis course listing. Edited to clarify footnote 7 with approval from Dr. Kwame Awuah-Offei while keeping the same requirements and course listings.

# Program Change Request

Date Submitted: 05/29/26 1:58 pm

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

Last approved: 06/14/22 4:25 pm

Last edit: 07/23/26 6:02 pm

Changes proposed by: Katie Shannon (shannonk)

Catalog Pages Using this Program

Prehealth Professions

Final Catalog FS2026-SP2027

Rationale for Supporting

| | |
|---|---|
| Effective Catalog Edition | FS2026-SP2027 |
| Start Term | Fall 2026 |
| Program Type | Minor |
| CIM Prospectus | |
| Academic Level | Undergraduate |
| Program Code | PRE-MED-MI |
| Department | College of Arts & Sciences |
| Discipline | Pre-Medicine |
| Offered by | |
| Title | |

### In Workflow

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

### Approval Path

1. 02/27/26 9:51 am Hannah Johnson (hjh9x): Approved for CCC Secretary
2. 02/27/26 9:55 am Crystal Wilson (wilsoncry): Rollback to CCC Secretary for Pending CCC Agenda post
3. 02/27/26 9:57 am Hannah Johnson (hjh9x): Approved for CCC Secretary
4. 02/27/26 10:04 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
5. 03/02/26 12:10 pm Hannah Johnson

(hjh9x): Approved for Pending CCC Agenda post
6. 03/17/26 11:25 am Hannah Johnson (hjh9x): Rollback to Initiator
7. 03/19/26 10:01 am Hannah Johnson (hjh9x): Rollback to Initiator
8. 07/13/26 11:16 am Crystal Wilson (wilsoncry): Approved for CCC Secretary
9. 07/23/26 6:02 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
10. 07/27/26 9:03 am Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post
11. 08/12/26 3:15 pm Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
12. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Mar 31, 2014 by

pantaleoa
2. Mar 31, 2014 by pantaleoa
3. Dec 11, 2017 by David Westenberg (djwesten)
4. Apr 28, 2020 by Katie Shannon (shannonk)
5. Feb 3, 2021 by Katie Shannon (shannonk)
6. Jun 14, 2022 by Katie Shannon (shannonk)

Pre-Medicine Minor

CIP Code

Purpose

Intended Audience

Program-Specific Admission

Program Requirements and Description

# Premedicine Minor

It is recommended that students seeking the Pre-Medicine minor declare their intentions as soon as possible. Students completing the Pre-Medicine minor curriculum in addition to their BA/BS curriculum will have completed all requirements for admission to most Medical, Dental, Veterinary or other health profession programs. However, it is important to consult with a member of the Pre-Health Professions Advisory Committee to ensure you are completing the necessary coursework for your desired profession. ~~The Pre-Medicine minor is~~

~~not intended for a student majoring in Chemistry, Biological Sciences or Chemical and Biochemical Engineering which already offer a Pre-Medicine approvedcurriculum.~~Required courses for the Pre-Medicine minor are:

| | | |
|---|---|---|
| ~~BIO SCI 1213~~ | ~~Principles of Biology~~ | ~~4~~ |
| ~~& BIO SCI 1219~~ | ~~and General Biology Lab~~ | |
| ~~or BIO SCI 1113~~ | ~~General Biology~~ | |
| ~~& BIO SCI 1219~~ | ~~and General Biology Lab~~ | |
| BIO SCI 2213 | Cell Biology | 4 |
| & BIO SCI 2219 | and Cell Biology Laboratory | |
| CHEM 1310 | General Chemistry I | 9 |
| & CHEM 1319 | and General Chemistry Laboratory | |
| & CHEM 1320 | and General Chemistry II | |
| & CHEM 1100 | and Introduction To Laboratory Safety & Hazardous Materials | |
| CHEM 2210 | Organic Chemistry I | 8 |
| & CHEM 2219 | and Organic Chemistry I Lab | |
| & CHEM 2220 | and Organic Chemistry II | |
| & CHEM 2229 | and Organic Chemistry II Lab | |
| PHYSICS 1145 | College Physics I | 4 |
| or PHYSICS 1135 | Engineering Physics I | |
| PHYSICS 2145 | College Physics II | 4 |
| or PHYSICS 2135 | Engineering Physics II | |
| | | |
| ~~MATH 1211~~ | ~~Calculus I-B~~ | ~~4~~ |
| ~~or MATH 1212~~ | ~~Survey of Calculus~~ | |
| ~~or MATH 1214~~ | ~~Calculus I~~ | |
| ~~One of the following courses (taking all four courses is strongly encouraged):~~ | | |
| ~~BIO SCI 2223~~ | ~~General Genetics~~ | |
| PREMED 3010 | Communication Workshop for the Pre-Health Student | 1 |
| Two of the following courses : | | 6 |
| BIO SCI 3313 | Microbiology | 3 |
| BIO SCI 3333 | Human Anatomy and Physiology I | 3 |
| BIO SCI 3343 | Human Anatomy and Physiology II | 3 |
| BIO SCI 3483 | Biomedical Problems | 3 |

| | | |
|---|---|---|
| CHEM 4610 | General Biochemistry | 3 |
| CHEM 4620 | Metabolism | 3 |
| CHEM 4650 | Medicinal Chemistry | 3 |
| PSYCH 3501 | Drugs and Behavior | 3 |
| PSYCH 4510 | Clinical Psychology | 3 |
| PSYCH 4590 | Health Psychology | 3 |

Justification for request

making this minor available to all majors. Making PREMED course required and removing Calculus and General Biology, adding 6 hours required 3000 or above

Attach Budget

System Approval Letter

MDHE Approval

Supporting Documents

Reviewer Comments

**Crystal Wilson (wilsoncry) (02/27/26 9:55 am):** Rollback: Rollback because it needs to go to the DSCC.

**Hannah Johnson (hjh9x) (03/17/26 11:25 am):** Rollback: Rolling back because the minor is not aligned with the minor policy regarding 6 credit hours at level 3XXX or higher.

**Hannah Johnson (hjh9x) (03/19/26 10:01 am):** Rollback: Rolling back because the minor is not aligned with the minor policy regarding 6 credit hours at level 3XXX or higher.

Key: 123

# Program Change Request

Date Submitted: 04/21/26 3:54 pm

## Viewing: SYS ENG-MS : Systems Engineering MS

Last approved: 06/14/24 1:17 pm

Last edit: 05/01/26 1:31 pm

Changes proposed by: Cihan Dagli (dagli)

Catalog Pages Using this Program

Systems Engineering

| | |
|---|---|
| Effective Catalog Edition | FS2027-SP2028 |
| Start Term | Fall 2027 |
| Program Type | Master of Science |
| Academic Level | Graduate |
| Program Code | SYS ENG-MS |
| 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. 04/21/26 3:57 pm Amaury Lendasse (altmg): Approved for RENGMNGT Chair
2. 05/05/26 11:54 am Hannah Johnson (hjh9x): Approved for CCC Secretary
3. 05/12/26 9:51 am Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 07/27/26 9:04 am Hannah Johnson (hjh9x): Approved for Pending CCC Agenda post
5. 08/12/26 3:16 pm

Hannah Johnson (hjh9x): Approved for CCC Meeting Agenda
6. 08/12/26 3:29 pm Cecil Eng Huang Chua (cchua): Approved for Campus Curricula Committee Chair

## History

1. Jun 12, 2014 by pantaleoa
2. Jul 21, 2014 by pantaleoa
3. Jun 19, 2015 by Stephen Raper (sraper)
4. Jul 24, 2015 by pantaleoa
5. Apr 19, 2016 by pantaleoa
6. May 16, 2016 by pantaleoa
7. Jun 14, 2019 by Sarah Johnson (johsarah)
8. Jun 14, 2024 by David Enke (enke)

Systems Engineering MS

CIP Code

Program Requirements and Description

The M.S. degree program is offered on the Rolla campus and several locations and by distance education throughout ~~including~~ the United States and selected international locations. ~~West County Continuing Education Center in St. Louis, and by distance education throughout the United States and selected internationallocations.~~Distance course lectures are archived upon completion of the lecture and all lectures are

available to students through streaming video during the semester for review. These courses can be reached from anywhere at any time. It is feasible to obtain a Missouri S&T non-thesis M.S. degree regardless of your location. The M.S. non-thesis program requires completion of at least 30 credit hours at 5XXX level or higher ~~10 three-credit hour courses~~ approved by the academic advisor. The M.S. with thesis option requires 36 credit hours including a minimum of 6 credit hours of graduate research. ~~the thesis.~~ All students are required to take the following:

## CORE Courses

| | | |
|---|---|---|
| SYS ENG 5101 | System Engineering and Analysis | 3 |
| SYS ENG 5106 | Verification Evaluation and Test | 3 |
| SYS ENG 6102 | Information Based Design | 3 |
| ~~SYS ENG 6103~~ | ~~Systems Life Cycle Costing~~ | ~~3~~ |
| SYS ENG 6104 | Systems Architecting | 3 |
| SYS ENG 6196 | Systems Engineering Capstone | 3 |
| SYS ENG 6542 | Model Based Systems Engineering | 3 |

## Specialization Courses

Specialization courses provides students with the ability to address his/her technology needs in the context of the overall Systems Engineering program. These graduate courses can be selected from engineering or the physical science department as long as they are approved by the program director.
One of the graduate certificates may be substituted for a specialization track with the permission of the program director.

Justification for request

Systems Engineering MS graduate program review by The Boeing Company and International Council of Systems Engineering INCOSE that recognizes our academic programs as an alternative to the INCOSE knowledge exam as a way for individuals to prove their systems engineering knowledge while they are being considered for becoming an Associate Systems Engineering Professional (ASEP) or Certified Systems Engineering Professional (CSEP) advised us to add a course on Verification Evaluation and Test to our core courses.

Attach Budget

System Approval Letter

MDHE Approval

Supporting

Documents

Reviewer

Comments

**Hannah Johnson (hjh9x) (04/23/26 8:49 am):** Alphabetized course listing.

**Hannah Johnson (hjh9x) (04/27/26 1:25 pm):** Hyperlinked Sys Eng 5106 in the course list.

**Hannah Johnson (hjh9x) (04/27/26 1:26 pm):** Changed effective catalog year and term to be for Fall 2027.

**Hannah Johnson (hjh9x) (05/01/26 1:11 pm):** Changed wording of "10 three-credit hour" to '30 credit hours' and added terminology to reflect course must be taken at 5xxx level or higher for the MS non-thesis requirements in top section. Changed " the thesis" in the MS thesis requirement sentence in the top section to say: a minimum of 6 credit hours of graduate research. These changes in wording and updated terminology were approved by Cihan Dagli.

**Hannah Johnson (hjh9x) (05/01/26 1:31 pm):** Removed " including the West County Continuing Education Center in St. Louis," in first sentence, per email from Cihan Dagli.

Key: 140

# 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 | September 17, 2026 |
| **Non-affecting CC forms for Summer 2027 & Spring 2027** | August 14, 2026 | September 4, 2026 | September 22, 2026 | October 22, 2026 |
| | September 4, 2026 | September 25, 2026 | October 13, 2026 | November 12, 2026 |
| **Affecting CC forms for Fall 2027** | October 2, 2026 | October 23, 2026 | November 10, 2026 | December 10, 2026 |
| **EC forms for Spring 2027** | December 4, 2026 | December 18, 2026 | January 12, 2027 | February 11, 2027 |
| | January 8, 2027 | January 29, 2027 | February 16, 2027 | March 18, 2027 |
| | February 12, 2027 | March 5, 2027 | March 23, 2027 | April 22, 2027 |
| **DC forms for Fall 2027** | March 5, 2027 | March 26, 2027 | April 13, 2027 | May 13, 2027 |
| **EC forms for Summer 2027 & non-affecting CC forms for Fall 2027** | April 2, 2027 | April 23, 2027 | May 11, 2027 | June 24, 2027 |
| **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.*