

Minutes of the Campus Curricula Committee Meeting

February 17, 2026

8:15 am, Fulton Hall 120

(For Faculty Senate Meeting of March 19, 2026)

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

The following curriculum forms were discussed and approved:

Course Change forms:

File: 5712 CER ENG 4510 : International Engineering and Design
 File: 5755 CHEM 4000 : Special Problems
 File: 5761 CHEM 4310 : Selected Topics In Inorganic Chemistry
 File: 2518 CHEM 4410 : Chemical Thermodynamics II
 File: 1492 CHEM 4420 : Chemical Kinetics II
 File: 688 CHEM 4510 : Instrumental Methods Of Chemical Analysis
 File: 5766 CHEM 5000 : Special Problems
 File: 5769 CHEM 5310 : Introduction to Inorganic Chemistry
 File: 1467 CHEM 5410 : Advanced Chemical Thermodynamics
 File: 2436 CHEM 5430 : Advanced Chemical Kinetics
 File: 398 CHEM 5630 : Biochemical Nanotechnology
 File: 235 CHEM 6450 : Spectroscopy
 File: 2328 EDUC 5370 : **Teachers Academy** : Effective Instructional Strategies
 File: 164 ENG MGT 4907 : Engineering Management Senior Design
 File: 10366 MATH 5670 : Scientific Programming with Python
 File: 4866 MATH 5680 : Mathematics of Machine Learning
 File: 8943 MET ENG 3330 : Metallurgical Thermodynamics I
 File: 1290 MET ENG 4450 : Steelmaking
 File: 8968 MET ENG 5220 : Recent Advances In Extractive Metallurgy
 File: 1455 MET ENG 5450 : Advanced Steelmaking
 File: 2193 MUSIC 1150 : Music **Understanding And** Appreciation

Program Change forms:

File: 141 AE ENG-BS : Aerospace Engineering BS
 File: 146 BIO SC-BA : Biological Sciences BA
 File: 372 CHEMPRO-CT : Chemical Process Engineering CT
 File: 45 ENG MGT-MI : Engineering Management Minor
 File: 288 ENT&TEC-CT : Entrepreneur & Tech Innovat CT
 File: 382 ENV SCI-BS : Environmental Science BS
 File: 388 INTRCU-CTU : Intercultural Studies CTU
 File: 377 MED LAB : Biological Sciences BS with Emphasis area in Medical Laboratory Scientist

File: 291 MGTLEAD-CT : Management and Leadership
File: 430 PROPOSED : Entertainment Technologies and Theatre (ET&T) CTU
File: 130 STU ART-MI : Studio Art Minor
File: 378 TEACH-CTU : Teaching and Learning Undergraduate Certificate

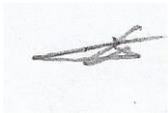
Experimental Course forms:

File: 551 SPANISH 4001.007: Scientific Spanish

New Business:

Briefed that 'how to resolve intensive writing for Gen Ed' was being considered at Faculty Senate.
Briefed that minor wording changes to Gen Ed from Registrar was being considered at Faculty Senate.
Briefed that minimum AI competency was being considered at Faculty Senate.

The meeting adjourned at 8:38 am.

A small, square image showing a handwritten signature in black ink on a white background. The signature is cursive and appears to be "Cecil Eng Huang Chua".

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

Course Change Request

A deleted record cannot be edited

Course Inactivation Proposal

Date Submitted: 12/05/25 2:06 pm

Viewing: **CER ENG 4510 : International Engineering and Design**

Also listed as: **GEO ENG 5092 / MET ENG 4510**

Last edit: 12/05/25 2:06 pm

Changes proposed by: David Lipke (lipked)

Justification for this
inactivation request

In Workflow

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

Approval Path

1. 12/05/25 4:35 pm
Michael Moats
(moatsm):
Approved for
RMATSENG Chair
2. 12/08/25 9:25 am
Jade McCain
(jm558v): Approved
for CCC Secretary
3. 01/15/26 9:03 am
Stephen Gao (sgao):
Approved for
RGEOENG Chair
4. 01/22/26 1:34 pm
Theresa Swift

(thswift): Approved
 for Engineering
 DSCC Chair

5. 01/30/26 4:10 pm
 Crystal Wilson
 (wilsoncry):
 Approved for
 Pending CCC
 Agenda post

6. 02/18/26 1:31 pm
 Hannah Johnson
 (hjh9x): Approved
 for CCC Meeting
 Agenda

7. 02/18/26 2:30 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for
 Campus Curricula
 Committee Chair

Course has not been offered in 10+ years with no plans to offer again.

Requested Effective Date	Fall 2026	
Department	Materials Science & Engineering (RMATSENG)	
Discipline	Ceramic Engineering (CER ENG)	
Course Number	4510	
Title	International Engineering and Design	
Abbreviated Course Title	International Engineer	
Co-Listed Course	GEO ENG 5092	Department
		Earth Sciences and Engineering (RGEOSENG)
	MET ENG 4510	Department

Materials Science &
Engineering
(RMATSENG)

Catalog Description

A multi-disciplinary engineering course focused on sustainable design and technology transfer to developing countries. Course includes elements of traditional capstone design classes. Experiential learning through competitions and/or field work is a major component of the class.

Prerequisite(s):

Senior standing, instructor approval, Geo Eng 5211, Geo Eng 5247.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors

Communication
Intensive

Communication
Emphasized

Grading Basis Graded

Repeatable No

Justification

Semesters Previously Offered

Term(s) Offered as

experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer
Comments

Key: 5712

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/30/25 8:10 pm

Viewing: **CHEM 4000 : Special Problems**

Last edit: 01/23/26 11:47 am

Changes proposed by: Klaus Woelk (woelkk)

Requested Effective Date	Fall 2026
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	4000
Title	Special Problems
Abbreviated Course Title	Special Problems
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 01/15/26 8:12 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 01/23/26 11:47 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 01/30/26 1:43 pm
Katie Shannon
(shannonk):
Approved for
Sciences DSCC Chair
4. 01/30/26 4:10 pm
Crystal Wilson
(wilsoncry):

Approved for
 Pending CCC
 Agenda post
 5. 02/18/26 1:31 pm
 Hannah Johnson
 (hjh9x): Approved
 for CCC Meeting
 Agenda
 6. 02/18/26 2:30 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for
 Campus Curricula
 Committee Chair

Problems or readings on specific subjects or projects in the department.

Prerequisite(s):

~~Preceded or accompanied by Chem 1100 or an equivalent training program approved by S&T.~~ Consent of instructor required.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Independent Study	0

Total: 0-6

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded or Satisfactory, Non-elective

Repeatable

Yes

Justification

Eliminate the prerequisite "Preceded or accompanied by Chem 1100 or an equivalent training program approved by S&T." because CHEM 4000 doesn't necessarily involve laboratory work.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer
Comments

Crystal Wilson (wilsoncry) (01/23/26 11:47 am): Marked yes for elective for majors. Marked no for CI and CE.

Key: 5755

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/30/25 8:13 pm

Viewing: **CHEM 4310 : Selected Topics In**

Inorganic Chemistry

Last edit: 01/21/26 8:53 am

Changes proposed by: Klaus Woelk (woelkk)

Programs
referencing this
course

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

Other Courses
referencing this
course

[In The Catalog Prerequisites:](#)

[CHEM 6330 : Nanomaterials Synthesis, Properties and Applications](#)

[CHEM 6380 : Inorganic Materials Chemistry](#)

Requested Effective Date	Spring 2027
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	4310
Title	Selected Topics In Inorganic Chemistry
Abbreviated Course Title	Sel Topics In Inorg Chem
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 01/15/26 8:12 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 01/21/26 8:53 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 01/30/26 1:43 pm
Katie Shannon
(shannonk):
Approved for
Sciences DSCC Chair
4. 01/30/26 4:10 pm
Crystal Wilson
(wilsoncry):

Approved for
Pending CCC
Agenda post
5. 02/18/26 1:32 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
6. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

A study of inorganic chemistry with emphasis on physical methods. General subjects covered include: molecular structure, bonding, complexes, spectroscopy, and reaction rates.

Prerequisite(s):

[Chem 3310.](#)

Corequisite(s):

Credit Hours

Credit Hours

	Credit Type	Credit Hours
Lecture		3

Total: 3

Required for Majors No

Elective for Majors [Yes](#)

Communication [No](#)

Intensive

Communication [No](#)

Emphasized

Grading Basis Graded

Repeatable

No

Justification

A basic understanding of inorganic chemistry (taught in Chem 3310) is required for a 4xxx level inorganic chemistry course.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer
Comments

Crystal Wilson (wilsoncry) (01/21/26 8:53 am): Changed effective term to spring 2027 per CCC deadlines.

Key: 5761

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/30/25 8:16 pm

Viewing: **CHEM 4410 : Chemical**

Thermodynamics II

Last approved: 11/03/14 3:53 am

Last edit: 01/21/26 9:10 am

Changes proposed by: Klaus Woelk (woelkk)

Other Courses
referencing this
course

[In The Catalog Description:](#)

[CHEM 5410 : Advanced Chemical Thermodynamics](#)

Requested Effective Date	Spring 2027
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	4410
Title	Chemical Thermodynamics II
Abbreviated Course Title	Chem. Thermodynamics II
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 04/18/24 9:11 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 04/29/24 11:01 am
Jennifer Pohlsander (jpnfd): Rollback to
Initiator
3. 01/15/26 8:12 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
4. 01/21/26 9:11 am
Crystal Wilson (wilsoncry):
Approved for CCC

Secretary

5. 01/30/26 1:43 pm

Katie Shannon

(shannonk):

Approved for

Sciences DSCC Chair

6. 01/30/26 4:10 pm

Crystal Wilson

(wilsoncry):

Approved for

Pending CCC

Agenda post

7. 02/18/26 1:32 pm

Hannah Johnson

(hjh9x): Approved

for CCC Meeting

Agenda

8. 02/18/26 2:30 pm

Cecil Eng Huang

Chua (cchua):

Approved for

Campus Curricula

Committee Chair

History

1. Nov 3, 2014 by

Klaus Woelk

(woelkk)

A study of the laws of thermodynamics with application to chemical systems. Emphasis is placed on partial molal functions.

Prerequisite(s):

Chem 2410. ~~3420~~.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No
Intensive

Communication No
Emphasized

Grading Basis Graded

Repeatable No

Justification

Degree plan changes require change of prerequisite to new course. Chem 3420 will no longer be offered; the new course in the Chemistry BS and BA degree plans is Chem 2410.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Jennifer Pohlsander (jpnfd) (04/29/24 11:01 am): Rollback: Please update effective date to Spring 2025 or Fall 2025.

Crystal Wilson (wilsoncry) (01/21/26 9:10 am): Changed effective term to spring 2027 per CCC deadlines.

Course Change Request

Date Submitted: 12/30/25 8:19 pm

Viewing: **CHEM 4420 : Chemical Kinetics II**

Formerly known as: **CHEM 4430**

Last approved: 07/31/24 6:04 am

Last edit: 01/21/26 8:51 am

Changes proposed by: Klaus Woelk (woelkk)

Requested Effective Date	Spring 2027
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	4420
Title	Chemical Kinetics II
Abbreviated Course Title	Chemical Kinetics II
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 01/15/26 8:12 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 01/21/26 8:51 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 01/30/26 1:43 pm
Katie Shannon
(shannonk):
Approved for
Sciences DSCC Chair
4. 01/30/26 4:10 pm
Crystal Wilson
(wilsoncry):

Approved for
Pending CCC
Agenda post
5. 02/18/26 1:32 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
6. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

History

1. Nov 3, 2014 by
Klaus Woelk
(woelkk)
2. Jul 31, 2024 by Evie
Sherlock (esdk3)

Advanced treatments of topics in physical chemistry including statistical mechanics and kinetics.

Prerequisite(s):

Chem 2420, ~~3420~~.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

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

Justification

Degree plan changes require change of prerequisite to new course. Chem 3420 will no longer be offered; the new course in the Chemistry BS and BA degree plans is Chem 2420.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/21/26 8:51 am): Changed effective term to spring 2027 per CCC deadlines.

Key: 1492

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/30/25 8:20 pm

Viewing: **CHEM 4510 : Instrumental Methods Of Chemical Analysis**

Last approved: 04/25/14 3:06 pm

Last edit: 01/23/26 12:04 pm

Changes proposed by: Klaus Woelk (woelkk)

Programs
referencing this
course

[M CHEM-CTU: Undergraduate Certificate in Medicinal Chemistry CTU](#)

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

Other Courses
referencing this
course

[In The Catalog Prerequisites:](#)

[CHEM 6510 : Separations](#)

[CHEM 6550 : Chemical Spectroscopy](#)

[CHEM 6555 : Principles And Applications Of Mass Spectrometry](#)

[In The Catalog Description:](#)

[CHEM 5510 : Introduction to Chemical Analysis](#)

Requested Effective Date	Fall 2026
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	4510
Title	Instrumental Methods Of Chemical Analysis

In Workflow

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

Approval Path

1. 01/15/26 8:12 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 01/23/26 12:04 pm
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 01/30/26 1:44 pm
Katie Shannon
(shannonk):
Approved for
Sciences DSCC Chair
4. 01/30/26 4:10 pm
Crystal Wilson
(wilsoncry):

Abbreviated Course Instr Mthds-Chem Analys

Title

Co-Listed Course

Catalog Description

Approved for

Pending CCC

Agenda post

5. 02/18/26 1:32 pm

Hannah Johnson

(hjh9x): Approved

for CCC Meeting

Agenda

6. 02/18/26 2:30 pm

Cecil Eng Huang

Chua (cchua):

Approved for

Campus Curricula

Committee Chair

History

1. Apr 25, 2014 by

Lahne Black (lahne)

Principles and analytical applications of molecular spectroscopy, chromatographic separations, mass spectrometry, and radiochemistry. A brief overview of instrument electronics, signal generation and processing, and automated analysis is also provided.

Prerequisite(s):

Chem 3510, ~~3510 and Chem 3430~~.

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 No
Intensive

Communication No
Emphasized

Grading Basis Graded

Repeatable No

Justification

Eliminate prerequisite Chem 3430 because it will no longer be offered.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/23/26 12:00 pm): Placed period at end of pre-req.

Crystal Wilson (wilsoncry) (01/23/26 12:04 pm): Answered no for required for majors as it is not required for the chem bs degree, it's an elective for the degree.

Course Change Request

Date Submitted: 12/30/25 8:24 pm

Viewing: **CHEM 5000 : Special Problems**

Last edit: 01/23/26 12:06 pm

Changes proposed by: Klaus Woelk (woelkk)

Requested Effective Date	Fall 2026
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	5000
Title	Special Problems
Abbreviated Course Title	Special Problems
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 01/15/26 8:12 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 01/23/26 12:06 pm
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 01/30/26 1:44 pm
Katie Shannon
(shannonk):
Approved for
Sciences DSCC Chair
4. 01/30/26 4:10 pm
Crystal Wilson
(wilsoncry):

Approved for
 Pending CCC
 Agenda post
 5. 02/18/26 1:32 pm
 Hannah Johnson
 (hjh9x): Approved
 for CCC Meeting
 Agenda
 6. 02/18/26 2:30 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for
 Campus Curricula
 Committee Chair

Problems or readings on specific subjects or projects in the department.

Prerequisite(s):

~~Preceded or accompanied by Chem 1100 or an equivalent training program approved by S&T.~~ Consent of instructor required. ~~required~~

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Independent Study	0

Total: 0-6

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable

Yes

Justification

Eliminate the prerequisite "Preceded or accompanied by Chem 1100 or an equivalent training program approved by S&T." because CHEM 5000 doesn't necessarily involve laboratory work.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer
Comments

Crystal Wilson (wilsoncry) (01/23/26 12:06 pm): Placed period at the end of pre-req.

Key: 5766

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/30/25 8:27 pm

Viewing: **CHEM 5310 : Introduction to Inorganic Chemistry**

Last edit: 01/21/26 8:56 am

Changes proposed by: Klaus Woelk (woelkk)

Requested Effective Date	Spring 2027
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	5310
Title	Introduction to Inorganic Chemistry
Abbreviated Course Title	Intro to Inorganic Chemistry
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 01/15/26 8:12 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for RCHEMIST Chair
2. 01/21/26 8:56 am
Crystal Wilson (wilsoncry):
Approved for CCC Secretary
3. 01/30/26 1:44 pm
Katie Shannon (shannonk):
Approved for Sciences DSCC Chair
4. 01/30/26 4:10 pm
Crystal Wilson (wilsoncry):

Approved for
 Pending CCC
 Agenda post
 5. 02/18/26 1:32 pm
 Hannah Johnson
 (hjh9x): Approved
 for CCC Meeting
 Agenda
 6. 02/18/26 2:30 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for
 Campus Curricula
 Committee Chair

A study of inorganic chemistry with emphasis on physical methods. General subjects covered include: molecular structure, bonding, complexes, spectroscopy, and reaction rates. Graduate students are required to demonstrate a higher level of proficiency during assessments.

Prerequisite(s):

[Chem 3310.](#)

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors [Yes](#)

Communication [No](#)

Intensive

Communication [No](#)

Emphasized

Grading Basis Graded

Repeatable No

Justification

A basic understanding of inorganic chemistry (taught in Chem 3310) is required for a 5xxx level inorganic chemistry course.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/21/26 8:56 am): Changed effective term to spring 2027 per CCC deadlines.

Key: 5769

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/30/25 8:30 pm

Viewing: **CHEM 5410 : Advanced Chemical**

Thermodynamics

Last approved: 11/03/14 3:53 am

Last edit: 01/21/26 8:57 am

Changes proposed by: Klaus Woelk (woelkk)

Requested Effective Date	Spring 2027
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	5410
Title	Advanced Chemical Thermodynamics
Abbreviated Course Title	Adv. Chem Thermodynamics
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 01/15/26 8:12 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 01/21/26 8:57 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 01/30/26 1:44 pm
Katie Shannon
(shannonk):
Approved for
Sciences DSCC Chair
4. 01/30/26 4:10 pm
Crystal Wilson
(wilsoncry):

- Approved for
Pending CCC
Agenda post
5. 02/18/26 1:32 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
6. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair
7. 02/18/26 2:51 pm
Hannah Johnson
(hjh9x): Approved
for FS Meeting
Agenda
8. 02/18/26 3:00 pm
Hannah Johnson
(hjh9x): Rollback to
FS Meeting Agenda
for Faculty Senate
Chair

History

1. Nov 3, 2014 by
Klaus Woelk
(woelkk)

A study of the laws of thermodynamics with application to chemical systems. Emphasis is placed on partial molal functions. Credit will not given for both Chem 5410 and Chem 4410.

Prerequisite(s):

Chem 2410. ~~3420~~.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No
Intensive

Communication No
Emphasized

Grading Basis Graded

Repeatable No

Justification

Degree plan changes require change of prerequisite to new course. Chem 3420 will no longer be offered; a basic understanding of chemical thermodynamic (now taught in Chem 2410) is required to be successful in Chem 5410.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/21/26 8:57 am): Changed effective term to spring 2027 per CCC deadlines.

Hannah Johnson (hjh9x) (02/18/26 3:00 pm): Rollback: Accidentally approved to Faculty senate chair, needed to roll back to the FS Meeting agenda.

Course Change Request

Date Submitted: 12/30/25 8:33 pm

Viewing: **CHEM 5430 : Advanced Chemical Kinetics**

Formerly known as: **CHEM 5420**

Last approved: 04/01/15 3:50 am

Last edit: 01/21/26 9:08 am

Changes proposed by: Klaus Woelk (woelkk)

Requested Effective Date	Spring 2027
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	5430
Title	Advanced Chemical Kinetics
Abbreviated Course Title	Adv. Chemical Kinetics
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 04/18/24 9:11 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 04/29/24 11:01 am
Jennifer Pohlsander (jpnfd): Rollback to Initiator
3. 01/15/26 8:13 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
4. 01/21/26 9:08 am
Crystal Wilson (wilsoncry):
Approved for CCC

Secretary

5. 01/30/26 1:44 pm

Katie Shannon

(shannonk):

Approved for

Sciences DSCC Chair

6. 01/30/26 4:10 pm

Crystal Wilson

(wilsoncry):

Approved for

Pending CCC

Agenda post

7. 02/18/26 1:33 pm

Hannah Johnson

(hjh9x): Approved

for CCC Meeting

Agenda

8. 02/18/26 2:30 pm

Cecil Eng Huang

Chua (cchua):

Approved for

Campus Curricula

Committee Chair

History

1. Apr 1, 2015 by Klaus

Woelk (woelkk)

Introductory graduate treatment of special topics of physical chemistry including statistical mechanics and kinetics.

Prerequisite(s):

Chem 2420. ~~3430~~.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

Degree plan changes require change of prerequisite to new course. Chem 3430 will no longer be offered; a basic understanding of chemical kinetics and quantum chemistry (now taught in Chem 2420) is required to be successful in Chem 5430.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Jennifer Pohlsander (jpnfd) (04/29/24 11:01 am): Rollback: Please update effective date to Spring 2025 or Fall 2025.

Crystal Wilson (wilsoncry) (01/21/26 9:08 am): Changed effective term to spring 2027 per CCC deadlines.

Course Change Request

Date Submitted: 12/30/25 8:40 pm

Viewing: **CHEM 5630 : Biochemical**

Nanotechnology

Last approved: 05/08/17 3:15 am

Last edit: 02/13/26 9:04 am

Changes proposed by: Klaus Woelk (woelkk)

Programs
referencing this
course

[BIOENG-PHD: Bioengineering PhD](#)

Requested Effective Date	Spring 2027
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	5630
Title	Biochemical Nanotechnology
Abbreviated Course Title	Bio-Nanotechnology
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 01/15/26 8:13 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 01/21/26 9:13 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 01/30/26 1:47 pm
Katie Shannon
(shannonk):
Approved for
Sciences DSCC Chair
4. 01/30/26 4:10 pm
Crystal Wilson
(wilsoncry):

Approved for
Pending CCC
Agenda post
5. 02/18/26 1:33 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
6. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

History

1. May 8, 2017 by
Risheng Wang
(wangri)

This course will educate on the interdisciplinary areas of bio-nanotechnology. Student will investigate the potential of nanoscience in advanced applications including DNA/protein nanotechnology, drug delivery, environmental biosensor and emerging biotechnology industries. Credit may not be given for both Chem 5630 and Chem 4630.

Prerequisite(s):

[Chem 2220](#). ~~At least junior 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	<u>No</u>
Communication Emphasized	<u>No</u>
Grading Basis	Graded
Repeatable	No

Justification

Adjusting prerequisites to those of Chem 4630 because Chem 4630 and 5630 are taught together as one course. In addition, the former prerequisite, i.e., "At least junior standing", bears no indication of academic progress.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer
Comments

Crystal Wilson (wilsoncry) (01/21/26 9:13 am): Changed effective term to spring 2027 per CCC deadlines.

Crystal Wilson (wilsoncry) (02/13/26 9:04 am): Added period to the pre-req.

Course Change Request

Date Submitted: 12/30/25 8:46 pm

Viewing: **CHEM 6450 : Spectroscopy**

Last edit: 01/21/26 9:02 am

Changes proposed by: Klaus Woelk (woelkk)

Requested Effective Date	Spring 2027
Department	Chemistry (RCHEMIST)
Discipline	Chemistry (CHEM)
Course Number	6450
Title	Spectroscopy
Abbreviated Course Title	Spectroscopy
Co-Listed Course	

Catalog Description

In Workflow

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

Approval Path

1. 04/18/24 9:10 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
2. 04/29/24 11:01 am
Jennifer Pohlsander (jpnfd): Rollback to Initiator
3. 01/15/26 8:13 am
Chariklia Sotiriou-Leventis (cslevent):
Approved for
RCHEMIST Chair
4. 01/21/26 9:02 am
Crystal Wilson (wilsoncry):
Approved for CCC

- Secretary
5. 01/30/26 1:47 pm
Katie Shannon
(shannonk):
Approved for
Sciences DSCC Chair
6. 01/30/26 4:10 pm
Crystal Wilson
(wilsoncry):
Approved for
Pending CCC
Agenda post
7. 02/18/26 1:33 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
8. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

Introduction to the interaction of electromagnetic radiation with matter. Emphasis on the ultraviolet, visible, and radio portions of the spectrum.

Prerequisite(s):

Chem 2420. ~~Chem 3420 or equivalent.~~

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

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

Justification

Degree plan changes require change of prerequisite to new course

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Jennifer Pohlsander (jpnfd) (04/29/24 11:01 am): Rollback: Please update effective date to Spring 2025 or Fall 2025.

Crystal Wilson (wilsoncry) (01/21/26 9:02 am): Changed effective term to spring 2027 per CCC deadlines.

Course Change Request

Date Submitted: 01/09/26 10:28 am

Viewing: **EDUC 5370 :**

~~TeachersAcademy~~: Effective Instructional Strategies

Formerly known as: **EDUC 4370**

Last approved: 01/26/19 4:56 am

Last edit: 01/21/26 10:25 am

Changes proposed by: Beth Kania-Gosche (bakm75)

Requested Effective Date Fall 2026

Department Education (REDUCATION)

Discipline Education (EDUC)

Course Number 5370

Title
~~TeachersAcademy~~: Effective Instructional Strategies

Abbreviated Course Title Effective Strategies ~~Teachers Academy~~

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. 01/10/26 10:00 am
Beth Kania-Gosche (bakm75):
Approved for REDUCATION Chair
2. 01/21/26 10:25 am
Crystal Wilson (wilsoncry):
Approved for CCC Secretary
3. 01/21/26 12:45 pm
Cecil Eng Huang Chua (cchua):
Approved for Social Sciences DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson

(wilsoncry):

Approved for

Pending CCC

Agenda post

5. 02/18/26 1:33 pm

Hannah Johnson

(hjh9x): Approved

for CCC Meeting

Agenda

6. 02/18/26 2:30 pm

Cecil Eng Huang

Chua (cchua):

Approved for

Campus Curricula

Committee Chair

History

1. Mar 26, 2018 by

Kelly Carter

(carterke)

2. Jan 26, 2019 by

ershenb

Participants will develop an understanding of research-based instruction and the ability to implement the instructional strategies in their classrooms. The course ~~In addition to effective instructional practices, the teachers' academy~~ will focus on leadership, empowerment, ~~collaboration~~ and collaboration. renewal.

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 has not been used for over seven years. It was originally titled Teachers' Academy so teachers in professional development programs could enroll in the course, but there was little interest. We are changing the title slightly so the course can be taught for forthcoming graduate certificates and a master's degree. It will no longer be aligned with the Teachers' Academy taught at the Regional Professional Development Center.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer
Comments

Course Change Request

Date Submitted: 01/18/26 4:21 pm

Viewing: **ENG MGT 4907 : Engineering**

Management Senior Design

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

Last edit: 01/21/26 11:01 am

Changes proposed by: Joan Schuman (schumanj)

Programs
referencing this
course

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

Requested Effective Date Spring 2027

Department Engineering Mgt & Sys Engr (RENGMNGT)

Discipline Engineering Management (ENG MGT)

Course Number 4907

Title
Engineering Management Senior Design

Abbreviated Course Title Eng Mgt Senior Design

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. 01/18/26 4:33 pm
Amaury Lendasse (altmg): Approved for RENGMNGT Chair
2. 01/21/26 11:01 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 01/22/26 1:34 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson

(wilsoncry):

Approved for

Pending CCC

Agenda post

5. 02/18/26 1:33 pm

Hannah Johnson

(hjh9x): Approved

for CCC Meeting

Agenda

6. 02/18/26 2:30 pm

Cecil Eng Huang

Chua (cchua):

Approved for

Campus Curricula

Committee Chair

History

1. Feb 9, 2015 by

Stephen Raper

(sraper)

Open-ended design projects will be addressed with small teams. The emphasis will be on solving industry-based projects that are broad in nature and which will require the students to incorporate the knowledge and skills acquired in earlier course work in the solution of the problems.

Prerequisite(s):

Eng Mgt 3320; Preceded or accompanied by Eng Mgt ~~Eng Mgt~~ 4110.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

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

Justification

To improve student success into the senior design class (Eng Mgt 4907) students also need to have project management knowledge prior.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/21/26 11:01 am): Changed effective term to spring 2027 per CCC deadlines.

Course Change Request

New Course Proposal

Date Submitted: 01/15/26 4:37 pm

Viewing: **MATH 5670 : Scientific Programming with Python**

Last edit: 01/28/26 9:01 am

Changes proposed by: John Singler (singlerj)

Programs
referencing this
course

[PROPOSED: Data Science BS](#)

[PROPOSED: Data Science MS](#)

Requested Effective Date	Fall 2026
Department	Mathematics & Statistics (RMATHEMA)
Discipline	Mathematics (MATH)
Course Number	5670
Title	Scientific Programming with Python
Abbreviated Course Title	Python Scientific Prog.
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. 01/15/26 4:38 pm
John Singler (singlerj): Approved for RMATHEMA Chair
2. 01/28/26 9:01 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 01/30/26 1:50 pm
Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson (wilsoncry):

Approved for
 Pending CCC
 Agenda post
 5. 02/18/26 1:35 pm
 Hannah Johnson
 (hjh9x): Approved
 for CCC Meeting
 Agenda
 6. 02/18/26 2:30 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for
 Campus Curricula
 Committee Chair

This course introduces scientific programming using Python and its associated libraries. Students develop computational skills to formulate, implement, and solve a variety of mathematical problems, as well as to create clear reports and informative visualizations. No prior knowledge of Python is required.

Prerequisite(s):

Math 3108.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification

This course is an elective for the proposed BS and MS data science degrees (the DC forms will be submitted soon). This course was run experimentally as Math 5001 in Fall 2025 with 48 students (total in two sections) and Fall 2024 with 48 students (total in two sections).

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/21/26 3:54 pm): Placed period at end of pre-req. Answered 'No' to CI and CE per department request.

Crystal Wilson (wilsoncry) (01/28/26 9:01 am): Confirm course was taught as Math 5001 fall 2024 with 48 enrolled for two sections and fall 2025 with 48 enrolled for two sections.

Key: 10366

[Preview Bridge](#)

Course Change Request

Date Submitted: 01/20/26 9:26 am

Viewing: **MATH 5680 : Mathematics of Machine Learning**

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

Last edit: 01/28/26 8:52 am

Changes proposed by: John Singler (singlerj)

Programs
referencing this
course

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

[PROPOSED: Data Science BS](#)

[PROPOSED: Data Science MS](#)

Requested Effective Date	Spring 2027
Department	Mathematics & Statistics (RMATHEMA)
Discipline	Mathematics (MATH)
Course Number	5680
Title	Mathematics of Machine Learning
Abbreviated Course Title	Math of Machine Learning
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. 01/20/26 9:27 am
John Singler (singlerj): Approved for RMATHEMA Chair
2. 01/20/26 9:47 am
Crystal Wilson (wilsoncry): Rollback to RMATHEMA Chair for CCC Secretary
3. 01/20/26 9:51 am
John Singler (singlerj): Approved for RMATHEMA Chair
4. 01/28/26 8:53 am
Crystal Wilson

(wilsoncry):

Approved for CCC
Secretary

5. 01/30/26 1:51 pm

Katie Shannon

(shannonk):

Approved for
Sciences DSCC Chair

6. 01/30/26 4:11 pm

Crystal Wilson

(wilsoncry):

Approved for
Pending CCC
Agenda post

7. 02/18/26 1:35 pm

Hannah Johnson

(hjh9x): Approved
for CCC Meeting

Agenda

8. 02/18/26 2:30 pm

Cecil Eng Huang

Chua (cchua):

Approved for
Campus Curricula
Committee Chair

History

1. May 4, 2022 by Paul Runnion (prunnion)

This course introduces machine learning from a mathematical and computational perspective, with an emphasis on the mathematical principles underlying learning algorithms. Topics include data representation and preprocessing, supervised and unsupervised learning methods, model evaluation, and visualization techniques. Students will implement core algorithms using Python and standard scientific computing libraries. Upon completion, students will be able to design, implement, and assess machine learning models for data-driven decision making.

~~Mathematics, programming, data analysis, and graphics associated with machine learning. Probability, Naïve Bayes classifier, stochastic gradient descent, self-organizing maps, decision trees and other tree-based methods, perception, reinforcement learning, keras, and~~

~~neural networks. These topics will be treated from a mathematical viewpoint.~~

Prerequisite(s):

A grade of "C" or better in Math 5670. ~~2222; programming competency.~~

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication No
Intensive

Communication No
Emphasized

Grading Basis Graded

Repeatable No

Justification

The changes to the course description and the prerequisite are proposed due to instructor experience teaching the course multiple times. Note that MATH 5670 is proposed and has been offered as MATH 5001 multiple times. The instructor partly designed MATH 5670 specifically to better prepare students for MATH 5680.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/20/26 9:47 am): Rollback: Rollback per department request to update pre-reqs.

Crystal Wilson (wilsoncry) (01/28/26 8:41 am): Adding a comment from the department as to why this is not a >50% change. Per Dr. Singler, "There is no massive change. The current description on Joe'ss is too broad and vague, and I made the current one more precise."

Crystal Wilson (wilsoncry) (01/28/26 8:52 am): Changed effective term to spring 2027 per CCC deadlines.

Key: 4866

[Preview Bridge](#)

Course Change Request

A deleted record cannot be edited

Course Inactivation Proposal

Date Submitted: 12/05/25 1:58 pm

Viewing: **MET ENG 3330 : Metallurgical**

Thermodynamics I

Last edit: 02/02/26 3:16 pm

Changes proposed by: David Lipke (lipked)

Other Courses
referencing this
course

In The Catalog Prerequisites:

[MET ENG 4450 : Steelmaking](#)

[MET ENG 5450 : Advanced Steelmaking](#)

Justification for this
inactivation request

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. 12/05/25 4:35 pm
Michael Moats
(moatsm):
Approved for
RMATSENG Chair
2. 12/24/25 10:17 am
Jade McCain
(jm558v): Approved
for CCC Secretary
3. 01/22/26 1:34 pm
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson

(wilsoncry):

Approved for

Pending CCC

Agenda post

5. 02/18/26 1:35 pm

Hannah Johnson

(hjh9x): Approved

for CCC Meeting

Agenda

6. 02/18/26 2:30 pm

Cecil Eng Huang

Chua (cchua):

Approved for

Campus Curricula

Committee Chair

Replaced with Met Eng 3230

Requested Effective Date	Spring 2027
Department	Materials Science & Engineering (RMATSENG)
Discipline	Metallurgical Engineering (MET ENG)
Course Number	3330
Title	Metallurgical Thermodynamics I
Abbreviated Course Title	Metallurgical Thermo I
Co-Listed Course	

Catalog Description

Thermodynamic laws and thermodynamic functions and their relation to problems of metallurgical interest, thermochemistry, thermophysics, and chemical or phase equilibria.

Prerequisite(s):

Met Eng 1210 or Chem 1320.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors

Communication

Intensive

Communication

Emphasized

Grading Basis Graded

Repeatable No

Justification

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer

Comments

Crystal Wilson (wilsoncry) (02/02/26 3:16 pm): Changed end term to spring 2027 per CCC deadlines as this is an affecting change.

Course Change Request

Date Submitted: 12/23/25 2:06 pm

Viewing: **MET ENG 4450 : Steelmaking**

Last approved: 10/19/15 3:34 am

Last edit: 02/02/26 3:17 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

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

Requested Effective Date	Spring 2027
Department	Materials Science & Engineering (RMATSENG)
Discipline	Metallurgical Engineering (MET ENG)
Course Number	4450
Title	Steelmaking
Abbreviated Course Title	Steelmaking
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. 12/23/25 2:40 pm
Michael Moats (moatsm):
Approved for RMATSENG Chair
2. 12/24/25 10:18 am
Jade McCain (jm558v): Approved for CCC Secretary
3. 01/22/26 1:34 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson (wilsoncry):

Approved for
 Pending CCC
 Agenda post
 5. 02/18/26 1:35 pm
 Hannah Johnson
 (hjh9x): Approved
 for CCC Meeting
 Agenda
 6. 02/18/26 2:30 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for
 Campus Curricula
 Committee Chair

History

1. Oct 19, 2015 by F. Scott Miller (smiller)

Introduction to the fundamentals and unit processes used to turn impure iron and scrap into steel. Includes desulfurization, BOF and electric furnace operations, ladle metallurgy, casting, and stainless steel manufacture.

Prerequisite(s):

Grade of "C" or better in Cer Eng 3230 or Met Eng 3230. ~~3330~~.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

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

Justification

Updating pre-requisite course number due to planned course inactivation.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Jade McCain (jm558v) (12/24/25 10:15 am): Selected "no" for communication emphasized and communication intensive.

Crystal Wilson (wilsoncry) (02/02/26 3:17 pm): Changed effective date to spring 2027 per CCC deadlines as this is an affecting change.

Key: 1290

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/05/25 4:38 pm

Viewing: **MET ENG 5220 : Recent Advances In Extractive Metallurgy**

Last edit: 02/02/26 3:17 pm

Changes proposed by: David Lipke (lipked)

Requested Effective Date	Spring 2027
Department	Materials Science & Engineering (RMATSENG)
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5220
Title	Recent Advances In Extractive Metallurgy
Abbreviated Course Title	Rec Advances Extract Met
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. 12/05/25 4:36 pm
Michael Moats (moatsm): Rollback to Initiator
2. 12/23/25 2:40 pm
Michael Moats (moatsm): Approved for RMATSENG Chair
3. 12/24/25 10:18 am
Jade McCain (jm558v): Approved for CCC Secretary
4. 01/22/26 1:34 pm
Theresa Swift (thswift): Approved for Engineering

DSCC Chair
 5. 01/30/26 4:11 pm
 Crystal Wilson
 (wilsoncry):
 Approved for
 Pending CCC
 Agenda post
 6. 02/18/26 1:35 pm
 Hannah Johnson
 (hjh9x): Approved
 for CCC Meeting
 Agenda
 7. 02/18/26 2:30 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for
 Campus Curricula
 Committee Chair

A survey of extractive processes recently developed in the light of modern requirements with respect to raw materials, product quality, environmental impact, energy consumption, capital cost and process control.

Prerequisite(s):

Met Eng 3230. ~~4350~~.

Corequisite(s):

Credit Hours

Credit Hours

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

Total: 3 ~~2~~

Required for Majors No

Elective for Majors Yes

Communication No

Intensive

Communication Emphasized No

Grading Basis Graded

Repeatable No

Justification

Given the emergence of critical minerals, this course is currently planned to be offered in even years (opposite Refining of Metals in odd years) as a 3-credit hour Met Eng elective. The pre-requisite has been updated to Met Eng 3230 (Thermodynamics of Materials) based on instructor feedback.

Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer

Comments

Michael Moats (moatsm) (12/05/25 4:36 pm): Rollback: Pre-req needs to be different

Crystal Wilson (wilsoncry) (02/02/26 3:17 pm): Changed effective date to spring 2027 per CCC deadlines as this is an affecting change.

Key: 8968

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/23/25 2:07 pm

Viewing: **MET ENG 5450 : Advanced**

Steelmaking

Last approved: 10/19/15 3:34 am

Last edit: 02/02/26 3:17 pm

Changes proposed by: David Lipke (lipked)

Programs
referencing this
course

[IRON-CT: Iron and Steel Metallurgy Certificate](#)

Requested Effective Date Spring 2027

Department Materials Science & Engineering (RMATSENG)

Discipline Metallurgical Engineering (MET ENG)

Course Number 5450

Title
Advanced Steelmaking

Abbreviated Course Title Advanced Steelmaking

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. 12/23/25 2:40 pm
Michael Moats (moatsm):
Approved for RMATSENG Chair
2. 12/24/25 10:18 am
Jade McCain (jm558v): Approved for CCC Secretary
3. 01/22/26 1:34 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson (wilsoncry):

Approved for
 Pending CCC
 Agenda post
 5. 02/18/26 1:35 pm
 Hannah Johnson
 (hjh9x): Approved
 for CCC Meeting
 Agenda
 6. 02/18/26 2:30 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for
 Campus Curricula
 Committee Chair

History

1. Oct 19, 2015 by F.
 Scott Miller (smiller)

This course is designed to provide students with an enhanced understanding of the chemistry and physics of ironmaking, steelmaking and casting, to apply these concepts to a wide range of problems in modern steelmaking and casting operations, and to perform advanced design and operational calculations associated with refining and continuous casting processes.

Prerequisite(s):

Grade of "C" or better in Cer Eng 3230 or Met Eng 3230. ~~3330~~.

Corequisite(s):

Credit Hours

Credit Hours

	Credit Type	Credit Hours
Lecture		3

Total: 3

Required for Majors No

Elective for Majors Yes ~~No~~

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

Justification

Updating pre-requisite course number due to planned course inactivation.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Jade McCain (jm558v) (12/24/25 10:17 am): Selected "no" for communication emphasized and communication intensive, selected "yes" for elective for major.

Crystal Wilson (wilsoncry) (02/02/26 3:17 pm): Changed effective date to spring 2027 per CCC deadlines as this is an affecting change.

Key: 1455

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/18/25 10:33 am

Viewing: **MUSIC 1150 : Music Understanding
And Appreciation**

Last edit: 12/23/25 1:27 pm

Changes proposed by: Irina Ivliyeva (ivliyeva)

Programs
referencing this
course

[AP MATH-BS: Applied Mathematics BS](#)
[CHEM-BA: Chemistry BA](#)
[MUSIC-MI: Music Minor](#)
[PSYCH-BA: Psychological Science BA](#)
[ECON-BA: Economics BA](#)
[ECON-BS: Economics BS](#)
[PROPOSED: Data Science BS](#)

Other Courses
referencing this
course

[In The Catalog Prerequisites:](#)
[HISTORY 3722 : Kings, Queens, and Guillotines: History of Music in the Enlightenment and Beyond](#)
[MUSIC 3251 : From the Church to the Palace: Music of the Middle Ages and Renaissance](#)
[MUSIC 3252 : Kings, Queens, and Guillotines: History of Music in the Enlightenment and Beyond](#)

Requested Effective Date	Fall 2026
Department	Arts, Languages & Philosophy (RPHILOSO)
Discipline	Music (MUSIC)

In Workflow

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

Approval Path

1. 10/18/18 1:22 pm
Audra Merfeld-Langston (audram): Rollback to Initiator
2. 12/18/25 10:38 am
Irina Ivliyeva (ivliyeva): Approved for RPHILOSO Chair
3. 12/23/25 1:29 pm
Jade McCain (jm558v): Approved for CCC Secretary
4. 01/29/26 1:18 pm
Alejandra Sobrado (asgx4): Approved for Arts & Humanities DSCC

Course Number 1150
 Title Music ~~Understanding And~~ Appreciation
 Abbreviated Course Music Appreciation ~~Mus Understanding &~~
 Title ~~Apprec~~
 Co-Listed Course

Chair
 5. 01/30/26 4:11 pm
 Crystal Wilson
 (wilsoncry):
 Approved for
 Pending CCC
 Agenda post
 6. 02/18/26 1:36 pm
 Hannah Johnson
 (hjh9x): Approved
 for CCC Meeting
 Agenda
 7. 02/18/26 2:30 pm
 Cecil Eng Huang
 Chua (cchua):
 Approved for
 Campus Curricula
 Committee Chair

Catalog Description

A study of the development of music with emphasis on understanding music forms and the role music has played in the various historical periods.

Prerequisite(s):

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes ~~No~~

Communication No

Intensive

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

Justification

MUSIC 1150 - MOTR MUSC 100: Music Appreciation is listed in the current catalogue. Correcting the filing errors in course title and description (from 2018 and 2020) to align with the current listing in the catalogue.

Music 1151 is a separate course, titled Music of Latin America, which is also listed in the catalogue: MUSIC 1151 Music of Latin America (LEC 3.0)

Music of Latin America will have an emphasis on music as a universal language. Students will gain an understanding that all cultures have a musical tradition, and recognizing this tradition contributes to the appreciation of each culture. Course will include discussions of Latin American influences on classical and Latino popular music. these are separate courses.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Audra Merfeld-Langston (audram) (10/18/18 1:22 pm): Rollback: Music Appreciation: Music of Latin America is a separate class and requires an EC form, not a CC form.

Jade McCain (jm558v) (12/23/25 1:27 pm): Selected "yes" for elective for majors and selected "no" for communication emphasized and communication intensive.

Jade McCain (jm558v) (12/23/25 1:27 pm): Changed requested effective date to Fall 2026 per CCC deadlines.

Program Change Request

Date Submitted: 01/16/26 12:16 pm

Viewing: **AE ENG-BS : Aerospace Engineering BS**

Last approved: 12/24/25 9:33 am

Last edit: 01/20/26 9:50 am

Changes proposed by: Nishant Kumar (nkwtb)

Catalog Pages Using
this Program

[Aerospace Engineering](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	AE ENG-BS
Department	Mechanical & Aerospace Engineering
Discipline	Aerospace 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. 01/16/26 12:33 pm
David Bayless (djbkqf): Approved for RMECHENG Chair
2. 01/20/26 9:51 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 01/22/26 1:34 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
4. 01/30/26 4:10 pm
Crystal Wilson (wilsoncry): Approved for Pending CCC

Agenda post

5. 02/18/26 1:31 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
6. 02/18/26 2:29 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

History

1. Apr 28, 2014 by J.
Keith Nisbett
(nisbett)
2. Aug 1, 2014 by
pantaleoa
3. Jul 14, 2015 by
pantaleoa
4. Mar 27, 2017 by
Shauntae Ellis
(smetg6)
5. Nov 2, 2018 by
Kakkattukuzhy Isaac
(isaac)
6. Jun 14, 2019 by
ershenb
7. Mar 3, 2020 by
ershenb
8. Oct 28, 2021 by J.
Keith Nisbett
(nisbett)
9. May 2, 2022 by J.
Keith Nisbett
(nisbett)
10. Apr 30, 2024 by J.
Keith Nisbett
(nisbett)

- 11. Jul 1, 2025 by
Nishant Kumar
(nkwtb)
- 12. Jul 1, 2025 by Jade
McCain (jm558v)
- 13. Dec 24, 2025 by
Nishant Kumar
(nkwtb)

Aerospace Engineering BS

CIP Code

Program Requirements and Description

Bachelor of Science Aerospace Engineering

The aerospace 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.

Students must comply with the requirements specified in the current online catalog published by the registrar. For the bachelor of science degree in aerospace 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. At least two grade points per credit hour must also be attained in all courses taken in aerospace engineering.

Freshman Year

First Semester	Credits	Second Semester	Credits
<u>FR ENG 1100</u>	1	<u>MECH ENG 1720</u>	3
<u>CHEM 1305</u> ⁴	4	<u>MATH 1215</u> ⁴	4
<u>CHEM 1319</u>	1	<u>PHYSICS 1135</u> ⁴	4
<u>ENGLISH 1120</u>	3	Gen. Ed. Elective ²	3
<u>MATH 1214</u> or <u>1211</u> ⁴	4		
<u>HISTORY 1200</u> , or <u>1300</u> , or <u>1310</u> , or <u>POL SCI 1200</u>	3		
	16		14

Sophomore Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2200 ⁴	3	AERO ENG 2780	2
MATH 2222 ⁴	4	AERO ENG 2360 ⁴	3
PHYSICS 2135 ⁴	4	MECH ENG 2519 ⁴	3
AERO ENG 2861 ⁴	3	MATH 3304 ⁴	3
Programming elective ¹	3	CIV ENG 2210 ⁴	3
		AERO ENG 2790	2
	17		16
Junior Year			
First Semester	Credits	Second Semester	Credits
AERO ENG 3613 ⁴	3	AERO ENG 3251 ⁴	3
AERO ENG 3131 ⁴	3	AERO ENG 3361	3
ELEC ENG 2800	3	AERO ENG 3171	3
MET ENG 2110	3	AERO ENG 4882	2
Electives-Advanced Math/Stat ⁵	3	General Elective - Ethics ³	3
		ENGLISH 1160 , or 3560 , or SPM S 1185	3
	15		17
Senior Year			
First Semester	Credits	Second Semester	Credits
AERO ENG 4535	3	AERO ENG 4781 or 4791	3
AERO ENG 4253	3	Electives-Technical ⁶	3
AERO ENG 4780 or 4790	3	Electives-Technical ⁶	3
AERO ENG 4883	2	AERO ENG 4885	1
Electives-Technical ⁶	3	Gen. Ed. Elective ²	3
Gen. Ed. Elective ²	3	Gen. Ed. Elective ²	3
	17		16

Total Credits: 128

1

The programming elective consists of a lecture and lab combination, and may be selected from [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.

2

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

3

Must be a course on engineering ethics, business ethics, bio ethics, social ethics, or any ethics course approved by the student's advisor.

4

A grade of "C" or better in [CHEM 1305](#), [MATH 1214](#) or [MATH 1211](#), [MATH 1215](#), [MATH 2222](#), [MATH 3304](#), [PHYSICS 1135](#), [PHYSICS 2135](#), [CIV ENG 2200](#), [CIV ENG 2210](#), and computer programming elective, [AERO ENG 2360](#), [AERO ENG 2861](#), and [MECH ENG 2519](#), as prerequisite for follow-up

courses in the curriculum and for graduation.

5

Must be one of the following: [MATH 3108](#), [STAT 3113](#), or any 5000-level math/stat course approved by the student's advisor.

6

Electives must be approved by the student's advisor. Nine hours of technical electives must be in mechanical and aerospace engineering. Three hours of departmental technical electives must be at the 5000-level.

[AERO ENG 3877](#) and the 5000-level Asteroid Mining course co-listed with geological engineering are not to be used for 5000-level technical elective.

Justification for
request

The change reflects the decision of our AE technical committee to treat this as an advanced math/stat elective course with no option for students to select an AE or Comp Sci engineering course to satisfy the requirement of this course.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/20/26 9:50 am): Updated start term to fall 2026. Removed stat 3115 from footnote 5 as this course will no longer be offered.

Program Change Request

Date Submitted: 01/13/26 12:05 pm

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

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

Last edit: 02/16/26 2:01 pm

Changes proposed by: Katie Shannon (shannonk)

Catalog Pages Using
this Program

[Biological Sciences](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Arts
Academic Level	Undergraduate
Program Code	BIO SC-BA
Department	Biological Sciences
Discipline	Biological Sciences
Title	

In Workflow

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

Approval Path

1. 01/14/26 10:05 am
Gina Yosten
(gyxmr): Approved for RBIOLSCI Chair
2. 01/20/26 9:35 am
Crystal Wilson
(wilsoncry): Approved for CCC Secretary
3. 01/30/26 1:42 pm
Katie Shannon
(shannonk): Approved for Sciences DSCC Chair
4. 01/30/26 4:10 pm
Crystal Wilson
(wilsoncry): Approved for Pending CCC Agenda post
5. 02/18/26 1:31 pm

Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda

6. 02/18/26 2:29 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

History

1. Aug 1, 2014 by Katie Shannon
(shannonk)
2. Jul 14, 2015 by pantaleoa
3. Oct 7, 2016 by Katie Shannon
(shannonk)
4. Jun 28, 2017 by Katie Shannon
(shannonk)
5. Nov 14, 2017 by Katie Shannon
(shannonk)
6. Jun 18, 2018 by Katie Shannon
(shannonk)
7. Jul 1, 2020 by Katie Shannon
(shannonk)
8. Feb 3, 2021 by Katie Shannon
(shannonk)
9. Jun 10, 2021 by Katie Shannon
(shannonk)
10. Jun 14, 2022 by Katie Shannon

(shannonk)

11. Jun 30, 2022 by Jennifer Pohlsander (jpnfd)
12. Jun 30, 2022 by Evie Sherlock (esdk3)
13. Jun 1, 2023 by Jennifer Pohlsander (jpnfd)
14. Jun 2, 2023 by Jennifer Pohlsander (jpnfd)
15. Jul 5, 2024 by Crystal Wilson (wilsoncry)
16. Oct 25, 2024 by Katie Shannon (shannonk)
17. Jul 1, 2025 by Crystal Wilson (wilsoncry)
18. Aug 27, 2025 by Crystal Wilson (wilsoncry)
19. Dec 24, 2025 by Crystal Wilson (wilsoncry)

Biological Sciences BA

CIP Code 26.0101 - Biology/Biological Sciences, General.

Intended Audience

Program-Specific

Program Requirements and Description

Bachelor of Arts

Biological Sciences

Degree Requirements

Specific requirements for the B.A. degree in biological sciences include a minimum of 120 semester hours of credit, including 30 hours of biology core courses. A "C" or better is required for all Biological Science courses. General Requirements for the B.A. must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

Core Courses

<u>BIO SCI 1201</u>	Biological Sciences First Year Seminar	1
<u>BIO SCI 1113</u>	General Biology	3
or <u>BIO SCI 1213</u>	Principles of Biology	
<u>BIO SCI 1219</u>	General Biology Lab	1
<u>BIO SCI 1223</u>	Biodiversity	3
<u>BIO SCI 1229</u>	Biodiversity Lab	1
<u>BIO SCI 2213</u>	Cell Biology	3
<u>BIO SCI 2219</u>	Cell Biology Laboratory	1
<u>BIO SCI 2223</u>	General Genetics	3
<u>BIO SCI 2263</u>	Ecology	3
<u>BIO SCI 3233</u>	Evolution	3
<u>BIO SCI 4010</u>	Seminar	1
<u>BIO SCI 4020</u>	<u>Senior Service Project</u>	<u>1</u>

Advanced courses, 2000 level or higher (at least one with laboratory and one 3000 or 4000 level)	9
--	---

Chemistry

<u>CHEM 1310</u>	General Chemistry I	4
<u>CHEM 1319</u>	General Chemistry Laboratory	1
<u>CHEM 1320</u>	General Chemistry II	3
<u>CHEM 1100</u>	Introduction To Laboratory Safety & Hazardous Materials	1
<u>CHEM 2210</u>	Organic Chemistry I	3
<u>CHEM 2220</u>	Organic Chemistry II	3

Mathematics & Physical Science		
Various courses in mathematics, physics, and/or geology chosen in consultation with academic advisor. (Note: Proficiency in College Algebra must be demonstrated by a grade of "C" or better in a College Algebra course or by examination)		9
Computer Science/Statistics (Select one of the following:)		
<u>COMP SCI 1570</u> & <u>COMP SCI 1580</u>	Introduction To C++ Programming and Introduction To Programming Laboratory	4
<u>COMP SCI 1971</u> & <u>COMP SCI 1981</u>	Introduction To Programming Methodology and Programming Methodology Laboratory	3
<u>STAT 3425</u>	Introduction to Biostatistics	4
General Requirements for BA		
English Composition		
<u>ENGLISH 1120</u>	Exposition And Argumentation	3
One additional composition course		3
Western Civilizations		
<u>HISTORY 1100</u>	Early Western Civilization	3
<u>HISTORY 1200</u>	Modern Western Civilization	3
Foreign Language (three semesters of a foreign language)		12
Humanities (including one class in each of literature, philosophy, and fine arts)		12
Social Sciences (including classes in two of the following three subjects: economics, political science, psychology)		12
Elective credits: In consultation with his or her advisor, each student will elect sufficient additional courses to complete a minimum of 120 credit hours.		
Bachelor of Arts		
Biological Sciences		
Pre-Medicine Emphasis Area		
Degree Requirements		
The student will fulfill the requirements for a bachelor of arts in biological sciences as outlined above. The following classes are also required:		

<u>CHEM 2219</u>	Organic Chemistry I Lab	1
<u>CHEM 2229</u>	Organic Chemistry II Lab	1
2 semesters of Physics and labs:		
<u>PHYSICS 1145</u>	College Physics I	4
or <u>PHYSICS 1135</u>	Engineering Physics I	
<u>PHYSICS 2145</u>	College Physics II	4
or <u>PHYSICS 2135</u>	Engineering Physics II	
The following classes are highly recommended:		
<u>BIO SCI 3333</u>	Human Anatomy and Physiology I	3
<u>BIO SCI 3343</u>	Human Anatomy and Physiology II	3
<u>BIO SCI 3359</u>	Physiology Lab	1
<u>CHEM 4610</u>	General Biochemistry	3
<u>PREMED 3010</u>	Communication Workshop for the Pre-Health Student	1

Bachelor of Arts

Biological Sciences

Secondary Education Emphasis Area

Degree Requirements

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

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

In order to successfully complete this emphasis area, students must have an 3.0 education GPA. Students must also pass the appropriate content assessment. Students must attain at least a 2.5 GPA for all biology courses and professional education courses required by the Missouri Department of Elementary and Secondary Education for teacher certification. This program is approved by the Missouri Department of Elementary and Secondary Education. License reciprocity determinations outside of Missouri can be found at <https://teaching.missouri.edu/student/state-authorization/mst/licensure>. Students must also meet all requirements listed under the teacher education website including passing the state-required assessments.

A degree in this emphasis area requires 127 credit hours. The required courses are provided below. A minimum grade of "C" is required by the department in all biological sciences courses counted toward this degree.

Humanities and Social Science courses for the B.A. must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

Humanities: 18 semester hours

<u>ENGLISH 1120</u>	Exposition And Argumentation	3
<u>ENGLISH 1160</u>	Writing And Research	3
or <u>ENGLISH 3560</u>	Technical Writing	
<u>SP&M S 1185</u>	Principles Of Speech	3

At least one course in each of the following: Literature, Philosophy and Fine Arts 9

Social Sciences: 15 semester hours

<u>HISTORY 3530</u>	History of Science	3
<u>HISTORY 1100</u>	Early Western Civilization	3
<u>HISTORY 1200</u>	Modern Western Civilization	3
<u>POL SCI 1200</u>	American Government	3
<u>PSYCH 1101</u>	General Psychology	3

Mathematics/Physical Science: 9 semester hours

<u>MATH 1103</u>	Fundamentals Of Algebra ¹	3
<u>PHYSICS 1145</u>	College Physics I	3
or <u>PHYSICS 1505</u>	Introductory Astronomy	
<u>GEOLOGY 1110</u>	Physical and Environmental Geology	3

Computer Science/Statistics: 3 semester hours

3 semester hours of Computer Science or Statistics 3

Chemistry: 15 semester hours

<u>CHEM 1310</u>	General Chemistry I	4
<u>CHEM 1319</u>	General Chemistry Laboratory	1
<u>CHEM 1320</u>	General Chemistry II	3
<u>CHEM 1100</u>	Introduction To Laboratory Safety & Hazardous Materials	1
<u>CHEM 2210</u>	Organic Chemistry I	3
<u>CHEM 2220</u>	Organic Chemistry II	3

Biological Sciences: 26 semester hours

<u>BIO SCI 1201</u>	Biological Sciences First Year Seminar	1
<u>BIO SCI 1213</u>	Principles of Biology	3
or <u>BIO SCI 1113</u>	General Biology	
<u>BIO SCI 1219</u>	General Biology Lab	1
<u>BIO SCI 1223</u>	Biodiversity	3
<u>BIO SCI 1229</u>	Biodiversity Lab	1
<u>BIO SCI 1173</u>	Introduction to Environmental Sciences	3
<u>BIO SCI 2213</u>	Cell Biology	3
<u>BIO SCI 2219</u>	Cell Biology Laboratory	1
<u>BIO SCI 2223</u>	General Genetics	3
<u>BIO SCI 2263</u>	Ecology	3
<u>BIO SCI 3233</u>	Evolution	3
<u>BIO SCI 4010</u>	Seminar	1
<u>BIO SCI 4020</u>	<u>Senior Service Project</u>	<u>1</u>
Education: 41 semester hours		
<u>EDUC 1074</u>	Foundations of Education in a Diverse Society	3
<u>EDUC 1104</u>	Teacher Field Experience I	1
<u>EDUC 1164</u>	Teacher Field Experience II	2
<u>EDUC 2310</u>	Education Of The Exceptional Child	3
<u>EDUC 3170</u>	Teaching Reading and Writing in Middle/High School	3
<u>EDUC 3216</u>	Instructional Literacy in the Content Area	3
<u>EDUC 3280</u>	Instructional Strategies in the Content Area	3
<u>EDUC 3298</u>	Teacher Field Experience III	1
<u>EDUC 3340</u>	Assessment of Student Learning	3
<u>EDUC 4298</u>	Student Teaching Seminar	1
<u>EDUC 4299</u>	Student Teaching	12
<u>PSYCH 2300/</u> <u>EDUC 2102</u>	Educational Psychology	3
<u>PSYCH 3310</u>	Developmental Psychology	3

MATH 1103 does not count towards mathematics Gen. Ed. requirement.

Justification for
request

Senior Seminar is being replaced with Senior Service Learning

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer
Comments

Program Change Request

Date Submitted: 01/15/26 4:59 pm

Viewing: **CHEMPRO-CT : Chemical Process**

Engineering CT

Last approved: 11/14/22 9:48 am

Last edit: 02/18/26 1:18 pm

Changes proposed by: Jee C. Wang (jcwang)

Catalog Pages Using
this Program

[Chemical & Biochemical Engineering](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Certificate
Academic Level	Graduate
Program Code	CHEMPRO-CT
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering
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

Approval Path

1. 12/09/25 12:46 pm
Ryan Gilbert (rggnx): Approved for RCHEMENG Chair
2. 12/15/25 3:50 pm
Jade McCain (jm558v): Approved for CCC Secretary
3. 12/16/25 8:11 am
Jade McCain (jm558v): Rollback to RCHEMENG Chair for Engineering DSCC Chair
4. 01/13/26 7:42 am
Crystal Wilson (wilsoncry): Rollback to Initiator
5. 01/16/26 1:25 pm

Ryan Gilbert
(rggnx): Approved
for RCHEMENG
Chair

6. 01/23/26 2:53 pm
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary

7. 01/29/26 2:36 pm
Theresa Swift
(thswift): Approved
for Engineering
DSCC Chair

8. 01/30/26 4:10 pm
Crystal Wilson
(wilsoncry):
Approved for
Pending CCC
Agenda post

9. 02/18/26 1:33 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda

10. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

History

1. Feb 3, 2021 by Jee
C. Wang (jcwang)
2. Nov 14, 2022 by Jee
C. Wang (jcwang)

Chemical Process Engineering CT

CIP Code [14.0701 - Chemical Engineering.](#)

Intended Audience

Main Campus Students

Program Requirements and Description

The graduate certificate in Chemical Process Engineering allows working professionals to add to skills relevant to their career while developing a deeper understanding of chemical engineering fundamentals.

The graduate certificate program is open to all individuals holding a bachelor's degree in chemical engineering or a closely allied discipline with an overall GPA of 3.0 or those holding a bachelor's degree in chemical engineering or a closely allied discipline with an overall GPA of 2.75 and having a minimum of one year of work experience.

Students admitted to the certificate program will have non-degree graduate status, but will earn graduate credit for the courses they complete. In order to receive a Graduate Certificate, the student must have an average graduate cumulative grade point of 3.0 or better on a 4.0 scale in the certificate courses taken.

If the four-course sequence approved by the graduate advisor is completed with a grade of B or better in each of the courses taken, the student will, upon application, be admitted to the Master of Science in Chemical Engineering program. The certificate courses taken by students admitted to the program will count towards the M.S. in Chemical Engineering program.

Core Courses: Select two from the following courses

<u>CHEM ENG 5100</u>	Intermediate Transport Phenomena	3
<u>CHEM ENG 5110</u>	Intermediate Chemical Reactor Design	3
<u>CHEM ENG 5150</u>	Intermediate Process Computing	3
<u>CHEM ENG 5220</u>	Intermediate Engineering Thermodynamics	3

Elective Courses: Select two additional 3-credit Chem Eng courses at the 5000 or 6000-level

<u>CHEM ENG 5120</u>	Interfacial Phenomena In Chemical Engineering	3
<u>CHEM ENG 5130</u>	Risk Assessment and Reduction	3
<u>CHEM ENG 5161</u>	Intermediate Molecular Engineering	3
<u>CHEM ENG 5170</u>	Physical Property Estimation	3
<u>CHEM ENG 5190</u>	Plantwide Process Control	3
<u>CHEM ENG 5200</u>	Advanced Thermal Properties of Ceramics	3
<u>CHEM ENG 5210</u>	Intermediate Biochemical Reactors	3
<u>CHEM ENG 5242</u>	<u>Intermediate Chemical Process Safety</u>	<u>3</u>
<u>CHEM ENG 5250</u>	Isolation and Purification of Biologicals	3
<u>CHEM ENG 5300</u>	Principles Of Engineering Materials	3

CHEM ENG 5305	Hazardous Materials Management	3
CHEM ENG 5310	Structure and Properties of Polymers	3
CHEM ENG 5315	(Corrosion and Its Prevention)	3
CHEM ENG 5320	Introduction to Nanomaterials	3
CHEM ENG 5325	Carbon Capture Process Engineering	3
CHEM ENG 5330	Alternative Fuels	3
CHEM ENG 5335	Introduction to Process Intensification	<u>3</u>
CHEM ENG 5340	Principles of Environmental Monitoring	3
CHEM ENG 5350	Environmental Chemodynamics	3
CHEM ENG 6100	Advanced Chemical Engineering Thermodynamics	3
CHEM ENG 6110	Advanced Transport Phenomena	3
CHEM ENG 6120	Applied Mathematics In Chemical Engineering	3
CHEM ENG 6140	Applied Optimization In Chemical Engineering	3
CHEM ENG 6150	Molecular Modeling and Simulation	3
CHEM ENG 6180	Advanced Applications of Computational Fluid Dynamics	3
CHEM ENG 6241	Course CHEM ENG 6241 Not Found	3
CHEM ENG 6300	Biomaterials II	3
CHEM ENG 6310	Course CHEM ENG 6310 Not Found	3
CHEM ENG 6330	Physicochemical Operations In Environmental Engineering Systems	3

Justification for request

1) CHEM ENG 6310 is the co-listed course number of MS&EE 6230 Nanomaterials, which was inactivated by the MS&EE department. Part of this request is to replace it with a relevant and popular new technical elective course titled "CHEM ENG 5335 Introduction to Process Intensification"

2) CHEM ENG 6241 Intermediate Chemical Process Safety was changed by the department to CHEM ENG 5242 with the same course title. Part of this request is to make this replacement to reflect the course number change

Attach Budget

System Approval
Letter

MDHE Approval

Supporting Documents [Campus Approval for Chemical Processing Engineering graduate certificate DC form.pdf](#)
[12232025 Revised Chem Process Engineering \(002\).pdf](#)

Reviewer

Comments

Jade McCain (jm558v) (12/16/25 8:11 am): Rollback: Rollback per needs approval paperwork.

Crystal Wilson (wilsoncry) (01/13/26 7:42 am): Rollback: Rollback to Dr. Wang for updates.

Crystal Wilson (wilsoncry) (01/16/26 9:50 am): Attached approval memos.

Crystal Wilson (wilsoncry) (01/23/26 2:51 pm): Removed Chem Eng 5251 as it was not listed on the approved revised paperwork. Department was notified to submit approved revised paperwork if they are going to add the course.

Program Change Request

Date Submitted: 01/18/26 5:07 pm

Viewing: **ENG MGT-MI : Engineering**

Management Minor

Last approved: 06/18/18 12:29 pm

Last edit: 02/18/26 12:25 pm

Changes proposed by: Joan Schuman (schumanj)

Catalog Pages Using
this Program

[Engineering Management](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Minor
Academic Level	Undergraduate
Program Code	ENG MGT-MI
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 3:11 pm
Amaury Lendasse (altmg): Rollback to Initiator
2. 01/18/26 4:43 pm
Amaury Lendasse (altmg): Rollback to Initiator
3. 01/18/26 5:23 pm
Amaury Lendasse (altmg): Approved for RENG MNGT Chair
4. 01/27/26 1:34 pm
Crystal Wilson (wilsoncry): Approved for CCC Secretary
5. 01/29/26 2:39 pm
Theresa Swift

(thswift): Approved
for Engineering
DSCC Chair

6. 01/30/26 4:11 pm

Crystal Wilson

(wilsoncry):

Approved for

Pending CCC

Agenda post

7. 02/18/26 1:34 pm

Hannah Johnson

(hjh9x): Approved

for CCC Meeting

Agenda

8. 02/18/26 2:30 pm

Cecil Eng Huang

Chua (cchua):

Approved for

Campus Curricula

Committee Chair

History

1. Apr 28, 2014 by

Stephen Raper

(sraper)

2. Jul 20, 2015 by

pantaleoa

3. Jun 18, 2018 by

Stephen Raper

(sraper)

Engineering Management Minor

CIP Code

Program Requirements and Description

Minor in Engineering Management

A student who receives a bachelor of science degree in an accredited **engineering** program ~~or Computer Science~~

from Missouri S&T may receive a minor in engineering management by completing 14-15 ~~15~~ hours of the courses listed below. ~~below.~~

<u>ENG MGT 1210</u>	<u>Economic Analysis of Engineering Projects</u> ¹	<u>2-3</u>
<u>ENG MGT 2110</u>	Managing Engineering And Technology	3
or <u>ENG MGT 5110</u>	Managerial Decision Making	
<u>ENG MGT 2211</u>	Engineering Accounting and Finance	3
<u>ENG MGT 3310</u>	Operations and Production Management	3
Eng Mgt 3000, 4000, or 5000-level course work chosen in consultation with minor advisor.		6
<u>ENG MGT 3320</u>	<u>Introduction to Project Management</u>	<u>3</u>
or <u>ENG MGT 5320</u>	<u>Project Management</u>	
Total Credits		14-15

¹
=
Or Eng Mgt 1000, 2000, 3000, 4000, or 5000-level course, not to include Eng Mgt 1100.

Justification for request

Several engineering departments require Eng Mgt 1210. With the current minor, these students need 17 credit hours to obtain a minor. Also, by allowing 5000-Level classes to be part of the minor, those classes can count toward the GTP and the minor. The requirement for "an accredited engineering program from S&T" was edited to "accredited program" was made to allow students from the Kummer College to also get a minor from our department.

Attach Budget

System Approval Letter

MDHE Approval

Supporting Documents

Reviewer

Comments

Amaury Lendasse (altmg) (01/18/26 3:11 pm): Rollback: This has to be modified too: A student who receives a bachelor of science degree in an accredited engineering program or Computer Science from Missouri S&T may receive a minor in engineering management by completing 15 hours of the courses listed below.

Amaury Lendasse (altmg) (01/18/26 4:43 pm): Rollback: you still should change to 14 hours

Crystal Wilson (wilsoncry) (02/18/26 12:24 pm): Department wants Eng Mgt 1210 to be listed specifically as a course that can go towards the minor as this course was not part of the minor in the past and several departments require this course as part of their degree programs. The department also wants to allow Eng Mgt 1000, 2000, 3000, 4000, or 5000-level course, not to include Eng Mgt 1100, in place of Eng Mgt 1210.

Program Change Request

Date Submitted: 01/14/26 12:23 pm

Viewing: **ENT&TEC-CT : Entrepreneur & Tech**

Innovat CT

Last approved: 09/20/24 2:59 pm

Last edit: 02/18/26 1:20 pm

Changes proposed by: Cecil Eng Huang Chua (cecq8z)

Catalog Pages Using
this Program

[Business Administration](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Certificate
Academic Level	Graduate
Program Code	ENT&TEC-CT
Department	Business and Information Tech
Discipline	Business
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. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar

Approval Path

1. 01/14/26 1:14 pm
Cassie Elrod (cassa):
Approved for
RBUS&IT Chair
2. 01/21/26 9:42 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 01/21/26 12:45 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson
(wilsoncry):
Approved for
Pending CCC
Agenda post

5. 02/18/26 1:34 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
6. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

History

1. Jun 12, 2019 by
ershenb
2. Feb 3, 2021 by Cecil
Eng Huang Chua
(cchua)
3. Sep 20, 2024 by
Cecil Eng Huang
Chua (cchua)

Entrepreneur & Tech Innovat CT

CIP Code 52.9999 - Business, Management, Marketing,
and Related Support Services, Other.

Intended Audience

Distance (online) Students

Main Campus Students

Program Requirements and Description

Entrepreneurship and Technological Innovation

Change and growth in Missouri and America require the training, nourishing, and flourishing of entrepreneurs. Many college students, however, do not yet recognize the entrepreneurial spirit in themselves. Recent entrepreneurship research indicates that many of the skills and much of the knowledge of successful entrepreneurs can be developed and taught in the classroom. The department of business and information technology has created this certificate to spark the entrepreneurial spirit in the students of Missouri S&T, and

provide them with a solid foundation on which to build.

To that end, the program focuses on the following competencies:

Recognizing opportunity

Assessing opportunity

Planning under uncertainty

Fostering innovations

Mastering creativity

Building and managing networks

Leveraging resources

Mitigating and managing risk

Focus and adaptability

Design thinking

Implementing new ideas

A student admitted to this graduate certificate must complete four courses:

Required core courses:

[BUS 5810](#) Branding for Innovation

[BUS 5980](#) Business Models for Entrepreneurship and Innovation

Two courses from the following list:

[BUS 5150](#) Customer Focus and Satisfaction

[BUS 5510](#) [Corporate Entrepreneurship and Ecosystem Strategy](#)

[IS&T 6251](#) Technological Innovation, Entrepreneurship, and Economic Development

[MKT 5310](#) Digital Marketing and Promotions

~~[BUS 5580](#)~~ ~~[Strategic Management](#)~~

Justification for
request

To be more in line with the Kummer College's focus on entrepreneurship

Attach Budget

System Approval
Letter

[Entrepreneurship and Technological Innovation Revised Grad Cert](#)

[Cover letter.pdf](#)

[Signed Revision Proposal Entre & Tech Innovation CT 10-23-25.pdf](#)

[Revised Grad Certificate Proposal Template-2-2023-entinnov.docx](#)

MDHE Approval

Supporting
Documents

[Revised-BIT-Entrepreneurship and Tech Inno GCT.pdf](#)

[Grad Ed Entrepreneurship and Tech Inno Degree Audit.pdf](#)

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/21/26 9:41 am): Attached degree audit from Grad Ed. Grad Ed is aware of the changes.

Program Change Request

Date Submitted: 11/18/25 4:04 pm

Viewing: **ENV SCI-BS : Environmental Science BS**

Last approved: 08/27/25 11:59 am

Last edit: 02/10/26 8:12 am

Changes proposed by: Katie Shannon (shannonk)

Catalog Pages Using
this Program

[Environmental Science](#)

In Workflow

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

Approval Path

1. 10/20/25 1:44 pm
Gina Yosten
(gyxmr): Approved
for RBIOLSCI Chair
2. 10/28/25 1:52 pm
Jade McCain
(jm558v): Rollback
to Initiator
3. 11/19/25 9:02 am
Gina Yosten
(gyxmr): Approved
for RBIOLSCI Chair
4. 12/05/25 2:23 pm
Jade McCain
(jm558v): Rollback
to RBIOLSCI Chair
for CCC Secretary
5. 12/10/25 4:08 pm
Gina Yosten

- (gyxmr): Approved
for RBIOLSCI Chair
6. 12/15/25 4:28 pm
Jade McCain
(jm558v): Rollback
to RBIOLSCI Chair
for CCC Secretary
7. 12/16/25 8:54 am
Gina Yosten
(gyxmr): Approved
for RBIOLSCI Chair
8. 12/19/25 11:39 am
Jade McCain
(jm558v): Approved
for CCC Secretary
9. 12/19/25 11:43 am
Gina Yosten
(gyxmr): Approved
for RBIOLSCI Chair
10. 12/19/25 11:48 am
Jade McCain
(jm558v): Approved
for CCC Secretary
11. 01/30/26 1:50 pm
Katie Shannon
(shannonk):
Approved for
Sciences DSCC Chair
12. 01/30/26 4:11 pm
Crystal Wilson
(wilsoncry):
Approved for
Pending CCC
Agenda post
13. 02/18/26 1:34 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
14. 02/18/26 2:30 pm
Cecil Eng Huang

Rationale for
Inactivation

Chua (cchua):
Approved for
Campus Curricula
Committee Chair

History

1. Jan 24, 2022 by
Nancy Winterburg
(nancym)
2. Jan 24, 2022 by Evie
Sherlock (esdk3)
3. Jan 24, 2022 by Evie
Sherlock (esdk3)
4. May 2, 2022 by
Katie Shannon
(shannonk)
5. Feb 17, 2023 by
Robin Verble
(verbler)
6. Jun 6, 2023 by
Nancy Winterburg
(nancym)
7. Jul 14, 2023 by
Jennifer Pohlsander
(jpnfd)
8. Apr 30, 2024 by Dev
Niyogi (niyogid)
9. Jul 5, 2024 by
Crystal Wilson
(wilsoncry)
10. Mar 17, 2025 by
Joel Burken
(burken)
11. Jul 1, 2025 by
Crystal Wilson
(wilsoncry)
12. Jul 17, 2025 by
Crystal Wilson
(wilsoncry)
13. Aug 27, 2025 by

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
CIM Prospectus	
Academic Level	Undergraduate
Program Code	ENV SCI-BS
Department	Biological Sciences
Discipline	Biological Sciences
Offered by	
Title	Environmental Science BS
CIP Code	03.0104 - Environmental Science.

Purpose

Intended Audience

Program-Specific
Admission

Program Requirements and Description

Bachelor of Science in Environmental Science

An Environmental Science degree at Missouri S&T commences with a first-year seminar course that is taken concurrently with an introductory environmental science course, creating familiar student cohorts that can support and motivate one another through the program. Throughout their four years in the program, students are trained in five core areas: economics, biology, geology, environmental engineering, and humanities. In addition, they build foundational skills in mathematics, physical science, and communications. As they progress through the program, students increasingly connect ideas from among and within core areas to build their understanding of the integrated multidisciplinary concepts in environmental science. During their junior and senior years, students will be able to customize their degrees by selecting from a diverse array of elective courses within core areas. The degree's flexible upper division elective choices also allow students to specialize and earn minors in core areas if they choose to do so.

Students apply the skills they learn in the classroom in hands-on laboratory and field courses. Students will finish their senior year with a capstone course that will be designed to engage them in professional development, connect them to career opportunities, hone their research and presentation skills through hands-on projects, and foster lifelong collegial relationships with their peers and instructors through intensive group work.

This curriculum benefits from a flexible design that allows students who may be transitioning from other programs on campus to complete the program in a timely manner. In addition, the degree creates opportunities for students to complete multiple minors within the degree, adding focus and strength to the interdisciplinary foundation. Students should choose free electives that, along with required courses, fulfill the general education requirements applicable to the student's catalog year.

Freshman Year

First Semester	Credits	Second Semester	Credits
<u>BIO SCI 1173</u>	3	<u>ENGLISH 1160</u>	3
<u>ENV SCI 1110</u>	1	<u>CHEM 1320</u> or <u>GEOLOGY 3410</u>	3
<u>CHEM 1310</u>	4	<u>BIO SCI 1223</u>	3
<u>CHEM 1100</u>	1	<u>BIO SCI 1229</u>	1
<u>CHEM 1319</u>	1	<u>MATH 1212</u> , or <u>1211</u> , or <u>1214</u>	4
<u>ECON 1100</u>	3	<u>Free Elective</u>	<u>1</u>
<u>ENGLISH 1120</u>	3		
	16		15

Sophomore Year

First Semester	Credits	Second Semester	Credits
<u>GEOLOGY 1110</u>	3	<u>BIO SCI 2263</u>	3
<u>ECON 4440</u> or <u>MIN ENG 4523</u>	3	<u>HISTORY 1300</u> or <u>1310</u>	3
<u>ENV ENG 2601</u> or <u>CIV ENG 2601</u>	3	<u>ENV ENG 2602</u> or <u>CIV ENG 2602</u>	3
<u>PHYSICS 1145</u> or <u>1135</u>	4	<u>GEO ENG 3148</u>	3
<u>POL SCI 1200</u>	3	<u>CIV ENG 5640</u> or <u>ENV ENG 5640</u>	3
<u>HISTORY 1300</u> or <u>1310</u>	<u>3</u>	<u>POL SCI 4320</u>	<u>3</u>
	16		15

Junior Year

First Semester	Credits	Second Semester	Credits
PHILOS 1130	3	<u>HISTORY 4470</u> , or <u>2510</u> , or <u>3530</u> , or <u>35103</u>	
<u>GEO ENG 5331</u>	3	GEOLOGY 2611	3
<u>PHILOS 4665</u>	<u>3</u>	<u>PHILOS 4350</u>	3
<u>ENV ENG 5642</u> or <u>CIV ENG 5642</u>	3	<u>STAT 3425</u> or <u>GEO ENG 4115</u>	3-4
<u>ECON 4540</u> or <u>MIN ENG 4524</u>	3	<u>BIO SCI 2223</u>	3
<u>BIO SCI 4313</u>	3		
<u>Free Elective</u>	<u>1</u>		
	16		12-13

Senior Year

First Semester	Credits	Second Semester	Credits
<u>GEOLOGY 4310</u> or <u>GEO ENG 5144</u>	3	HUMANITIES AND FINE ARTS ELECTIVE	3
FREE ELECTIVES	2	<u>ENV SCI 4028</u>	3
UPPER DIVISION ELECTIVES ¹	9	UPPER DIVISION ELECTIVES ¹	9
<u>GEOLOGY 2611</u> or <u>GEO ENG 2536</u>	<u>3</u>		
	15		15

Total Credits: 120-121

1

See Upper Division Elective Course List

[Upper Division Elective Course List](#)

<u>BIO SCI 2242</u>	Cave Biology	2
<u>BIO SCI 2252</u>	Vegetation of the Ozarks	2
<u>BIO SCI 2264</u>	Field Ecology	2
<u>BIO SCI 2372</u>	Issues in Public Health	3
<u>BIO SCI 2383</u>	Plant Biology	3
<u>BIO SCI 2389</u>	Plant Biology Laboratory	1
BIO SCI 3353	Comparative Vertebrate Anatomy	4
<u>BIO SCI 3363</u>	Ecophysiology	3
<u>BIO SCI 4099</u>	Undergraduate Research	1-3
<u>BIO SCI 4316</u>	Introduction to Geomicrobiology	3
<u>BIO SCI 4363</u>	Freshwater Ecology	3
<u>BIO SCI 4369</u>	Freshwater Ecology Laboratory	1
<u>BIO SCI 4383</u>	Toxicology	3
<u>BIO SCI 4423</u>	Introduction to Astrobiology	3

<u>BIO SCI 4563</u>	Global Ecology	3
<u>BIO SCI 4663</u>	Animal Behavior	3
<u>BIO SCI 5423</u>	Advanced Biodiversity	3
<u>BIO SCI 5443</u>	Population and Conservation Genetics	3
<u>CHEM 4710</u>	Principles Of Environmental Chemistry	3
<u>CIV ENG 5605</u>	Environmental Systems Modeling	3
<u>CIV ENG 5630</u>	Remediation of Contaminated Groundwater and Soil	3
<u>CIV ENG 5635</u>	Phytoremediation and Natural Treatment Systems: Science and Design	3
<u>CIV ENG 5650</u>	Public Health Engineering	3
<u>CIV ENG 5660</u>	Introduction To Air Pollution	3
<u>CIV ENG 5662</u>	Air Pollution Control Methods	3
<u>CIV ENG 5665</u>	Indoor Air Pollution	3
<u>ECON 4085</u>	Internship	0-6
<u>ECON 4641</u>	Foundations of Sustainability	3
<u>ECON 4642</u>	Introduction to Global Eco- and Social-preneurship and Innovation	3
<u>ECON 4643</u>	Ethical Problems in a Global Environment	3
<u>ECON 5644</u>	Creativity, Innovation, and Sustainability	3
<u>ENV ENG 3615</u>	Water And Wastewater Engineering	3
<u>ENV ENG 4010</u>	Senior Seminar: Engineering In A Global Society	1
<u>ENV ENG 4099</u>	Undergraduate Research	0-6
<u>ENV ENG 4609</u>	Research in Environmental Engineering	1
<u>ENV ENG 5605</u>	Environmental Systems Modeling	3
<u>ENV ENG 5630</u>	Remediation of Contaminated Groundwater And Soil	3
<u>ENV ENG 5635</u>	Phytoremediation and Natural Treatment Systems: Science and Design	3
<u>ENV ENG 5650</u>	Public Health Engineering	3
<u>ENV ENG 5660</u>	Introduction To Air Pollution	3
<u>ENV ENG 5662</u>	Air Pollution Control Methods	3
<u>ENV ENG 5665</u>	Indoor Air Pollution	3

<u>GEO ENG 4099</u>	Undergraduate Research	0-6
GEO ENG 4115	Statistical Methods in Geology and Engineering	3
<u>GEO ENG 4276</u>	Environmental Aspects Of Mining	3
<u>GEO ENG 5085</u>	Internship	0-15
<u>GEO ENG 5146</u>	Applications Of Geographic Information Systems	3
GEO ENG 5174	Geological Engineering Field Methods	3
<u>GEO ENG 5233</u>	Risk Assessment In Environmental Studies	3
<u>BIO SCI 3383</u>	<u>Plant Physiology</u>	<u>3</u>
<u>BIO SCI 5453</u>	<u>Forest Insect Diversity & Ecology</u>	<u>2</u>
<u>BIO SCI 5523</u>	<u>Ichthyology</u>	<u>3</u>
<u>PHILOS 3277</u>	<u>Wilderness and Its Critics</u>	<u>3</u>
<u>ENV SCI 4099</u>	<u>Undergraduate Research</u>	<u>0-6</u>
<u>ENV SCI 3213</u>	<u>One Health Basics</u>	<u>3</u>
<u>ENV SCI 4010</u>	<u>Seminar</u>	<u>1</u>
<u>HISTORY 2110</u>	<u>World Regional Geography</u>	<u>3</u>
<u>ECON 3512</u>	<u>Mining Industry Economics</u>	<u>3</u>
<u>ECON 5658</u>	<u>Building Sustainability and Environmental, Social and Governance (ESG)</u>	<u>3</u>
<u>GEOLOGY 2610</u>	<u>Mineralogy And Crystallography</u>	<u>4</u>
<u>GEOLOGY 2611</u>	<u>Physical Mineralogy And Petrology</u>	<u>3</u>
<u>GEOLOGY 4321</u>	<u>Drone Mapping and Photogrammetry</u>	<u>3</u>
<u>GEOLOGY 4630</u>	<u>Systematic Paleontology</u>	<u>3</u>
<u>GEOLOGY 4821</u>	<u>Applications Of Geographic Information Systems</u>	<u>3</u>
<u>GEO ENG 2536</u>	<u>Basic Weather</u>	<u>3</u>
<u>GEO ENG 5239</u>	Groundwater Remediation	3
<u>GEO ENG 5276</u>	Sustainability in Mining	3
<u>GEO ENG 5320</u>	Groundwater Modeling	3
<u>GEO ENG 5332</u>	Fundamentals of Groundwater Hydrology	3
<u>GEO ENG 5556</u>	Renewable Energy Systems	3

<u>GEOLOGY 2096</u>	Field Geology	3
<u>GEOLOGY 2731</u>	Introduction to Planetary Science	3
<u>GEOLOGY 4085</u>	Internship	3
<u>GEOLOGY 4099</u>	Undergraduate Research	0-6
<u>GEOLOGY 4310</u>	Remote Sensing Technology	3
<u>GEOLOGY 4411</u>	Hydrogeology	3
<u>GEOLOGY 4431</u>	Methods Of Karst Hydrogeology	3
<u>GEOLOGY 4711</u>	Paleoclimatology and Paleoecology	3
<u>GEOLOGY 4721</u>	Climate Change and Society	3
<u>GEOLOGY 4841</u>	Geological Field Studies	3
<u>GEOLOGY 5681</u>	Lidar Principles and Application	3
<u>GEOLOGY 5741</u>	Micropaleontology	3
<u>MIN ENG 5742</u>	Sustainability in Mining	3
<u>POL SCI 3300</u>	Principles Of Public Policy	3
<u>POL SCI 4085</u>	Political Science Internship	0-6
<u>POL SCI 4320</u>	The Politics of Innovation	3
<u>ENV SCI 5425</u>	<u>Environmental Conservation</u>	<u>3</u>

Secondary Education Emphasis Area

You may earn a BS degree in environmental science from Missouri S&T and certification to teach at the secondary level in the schools of Missouri with this emphasis area. This program is approved by the Missouri Department of Elementary and Secondary Education. License reciprocity determinations outside of Missouri can be found at <https://teaching.missouri.edu/student/state-authorization/mst/licensure>. This program can be completed in four academic years, and student teaching is arranged with public schools anywhere in the state. Students interested in this emphasis area should consult with the advisor for environmental science.

In order to successfully complete the emphasis area, students must attain at least a 2.5 GPA for all environmental science courses and a 3.0 education GPA required by the Missouri Department of Elementary and Secondary Education for teacher certification. Courses must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

Students must also meet all requirements listed under the teacher education website including passing the state-required assessments.

A degree in the emphasis area requires a minimum of 127 credit hours. The required courses are provided below.

Humanities: 12 semester hours

<u>ENGLISH 1120</u>	Exposition And Argumentation	3
<u>ENGLISH 1160</u>	Writing And Research	3
or <u>ENGLISH 3560</u>	Technical Writing	
<u>PHILOS 1130</u>	How Should I Live? An Introduction to Ethics	3
<u>PHILOS 4350</u>	Environmental Ethics and Justice	3
Social Sciences: 18 semester hours		
<u>HISTORY 1310</u>	American History Since 1877	3
<u>PSYCH 1101</u>	General Psychology	3
<u>PSYCH 3310</u>	Developmental Psychology	3
<u>ECON 1100</u>	Principles Of Microeconomics	3
<u>ECON 4440</u>	Environmental And Natural Resource Economics	3
<u>HISTORY 2510</u>	History of Technology	3
or <u>HISTORY 3510</u>	Twentieth Century Technology And Society	
or <u>HISTORY 3530</u>	History of Science	
Mathematics/Physical Science: 12 semester hours		
<u>MATH 1214</u>	Calculus I	4-9
or <u>MATH 1210</u> & <u>MATH 1211</u>	Calculus I-A and Calculus I-B	
<u>PHYSICS 1505</u> & <u>PHYSICS 1509</u>	Introductory Astronomy and Astronomy Laboratory	4
<u>PHYSICS 1145</u>	College Physics I	4
or <u>PHYSICS 1135</u>	Engineering Physics I	
Statistics: 3 semester hours		
<u>STAT 3425</u>	Introduction to Biostatistics	3-4
or <u>STAT 3113</u>	Applied Engineering Statistics	
Biological Sciences: 13 semester hours		
<u>BIO SCI 1223</u> & <u>BIO SCI 1229</u>	Biodiversity and Biodiversity Lab	4
<u>BIO SCI 1173</u>	Introduction to Environmental Sciences	3

<u>BIO SCI 2223</u>	General Genetics	3
<u>BIO SCI 2263</u>	Ecology	3
Chemistry: 9 semester hours		
<u>CHEM 1100</u>	Introduction To Laboratory Safety & Hazardous Materials	1
<u>CHEM 1310</u>	General Chemistry I	4
<u>CHEM 1319</u>	General Chemistry Laboratory	1
<u>CHEM 1320</u>	General Chemistry II	3
Civil, Architectural and Environmental Engineering: 9 semester hours		
<u>ENV ENG 2601</u>	Fundamentals of Environmental Engineering and Science	3
<u>ENV ENG 2602</u>	Biological Fundamentals Of Environmental Engineering	3
<u>ENV ENG 5640</u>	Environmental Law And Regulations	3
or <u>ENV ENG 5642</u>	Sustainability, Population, Energy, Water, and Materials	
Environmental Science: 1 semester hour		
<u>ENV SCI 1110</u>	Environmental Science Freshman Seminar	1
Geological Sciences/Geological and Petroleum Engineering: 12 semester hours		
<u>GEO ENG 2536</u>	Basic Weather	3
<u>GEOLOGY 1110</u>	Physical and Environmental Geology	3
<u>GEOLOGY 2611</u>	Physical Mineralogy And Petrology	3
<u>GEO ENG 3148</u>	Fundamentals Of Geographic Information Systems	3
Education: 38 semester hours		
<u>EDUC 1074</u>	Foundations of Education in a Diverse Society	3
<u>EDUC 1104</u>	Teacher Field Experience I	1
<u>EDUC 1164</u>	Teacher Field Experience II	2
<u>EDUC 3170</u>	Teaching Reading and Writing in Middle/High School	3
<u>EDUC 3216</u>	Instructional Literacy in the Content Area	3
<u>EDUC 3280</u>	Instructional Strategies in the Content Area	3
<u>EDUC 3298</u>	Teacher Field Experience III	1
<u>EDUC 3340</u>	Assessment of Student Learning	3

EDUC 4298	Student Teaching Seminar	1
EDUC 4299	Student Teaching	12
PSYCH 2300	Educational Psychology	3
or EDUC 2102	Educational Psychology	
PSYCH 4310	Psychology Of The Exceptional Child	3
or EDUC 2310	Education Of The Exceptional Child	

Justification for
request

Robin Verble requested changes

Attach Budget

System Approval
Letter

MDHE Approval

Supporting Documents [Department Approval for DC Gen Ed Changes.pdf](#)

Reviewer

Comments

Jade McCain (jm558v) (10/28/25 1:52 pm): Rollback: Rollback per does not meet the required 120 credit hours.

Jade McCain (jm558v) (12/05/25 2:23 pm): Rollback: Rollback per the prerequisite for POL SCI 4320 must be listed in a prior semester on the plan of study grid.

Jade McCain (jm558v) (12/15/25 4:28 pm): Rollback: Rollback per History 1300 must be listed in a prior to Pol Sci 4320 on the plan of study grid.

Jade McCain (jm558v) (12/19/25 11:34 am): Moved Pol Sci 4320 to sophomore year second semester and History 1300 to sophomore year first semester due to History 1300 being a prerequisite for Pol Sci 4320, and corrected free elective formatting.

Crystal Wilson (wilsoncry) (02/10/26 8:12 am): Per department request, added 1 credit hour of free elective to freshman year, second semester, to ensure the degree program meets the required 120 credit hours needed.

Program Change Request

Date Submitted: 12/17/25 7:51 pm

Viewing: **INTRCU-CTU : Intercultural Studies CTU**

Last approved: 07/01/25 11:12 am

Last edit: 02/18/26 1:22 pm

Changes proposed by: Irina Ivliyeva (ivliyeva)

Catalog Pages Using
this Program

[Multidisciplinary Studies](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Certificate
Academic Level	Undergraduate
Program Code	INTRCU-CTU
Department	Arts, Languages & Philosophy
Discipline	Arts, Languages and Philosophy
Title	

In Workflow

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

Approval Path

1. 12/17/25 7:59 pm
Irina Ivliyeva (ivliyeva): Approved for RPHILOSO Chair
2. 12/23/25 1:29 pm
Jade McCain (jm558v): Approved for CCC Secretary
3. 01/29/26 1:18 pm
Alejandra Sobrado (asgx4): Approved for Arts & Humanities DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson (wilsoncry): Approved for Pending CCC Agenda post

5. 02/18/26 1:34 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
6. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

History

1. May 2, 2022 by
Monica Kasza
(msp7h)
2. Jun 17, 2022 by
Crystal Wilson
(wilsoncry)
3. Aug 4, 2022 by Evie
Sherlock (esdk3)
4. Mar 26, 2025 by
Irina Ivliyeva
(ivliyeva)
5. Jul 1, 2025 by Irina
Ivliyeva (ivliyeva)

Intercultural Studies CTU

CIP Code

Intended Audience

Main Campus Students

Program Requirements and Description

Intercultural Studies Certificate

This certificate program is for students from any major who wish to expand their knowledge of intercultural issues from a multidisciplinary perspective, and develop the knowledge, skills and aptitudes necessary to work

successfully in today's global and interconnected world. Students select four courses from an approved list in consultation with their certificate advisor. Many of the courses also fulfill requirements for degree programs. Students must meet regular Missouri S&T undergraduate admission requirements.

Certificate Requirements

Choose one:

<u>ENGLISH 1212</u>	British Literature II 1800 To Present	3
<u>HISTORY 1200</u>	Modern Western Civilization	3

Choose three additional courses:

<u>ECON 4642</u>	Introduction to Global Eco- and Social-preneurship and Innovation	3
<u>ECON 4643</u>	Ethical Problems in a Global Environment	3
<u>ENGLISH 2002</u>	Critical Approaches To Literature	3
<u>ENGLISH 3219</u>	The British Novel II	3
<u>ENGLISH 3233</u>	Contemporary British Literature	3
<u>ENGLISH 3304</u>	Language in Society	3
<u>HISTORY 2110</u>	World Regional Geography	3
<u>HISTORY 2220</u>	Making Of Modern Britain	3
<u>HISTORY 2221</u>	Making of Modern Germany	3
<u>HISTORY 2222</u>	The Making Of Modern France	3
<u>HISTORY 2224</u>	Making Of Modern Russia	3
<u>HISTORY 3240</u>	Contemporary Europe	3
<u>HISTORY 3600</u>	World History	3
<u>HISTORY 3660</u>	Modern East Asia	3
<u>MUSIC 1151</u>	<u>Music of Latin America</u>	<u>3</u>
<u>POL SCI 2500</u>	International Relations	3
<u>POL SCI 4500</u>	Geopolitics and International Security	3
<u>POL SCI 4510</u>	The Politics of the Global South	3
<u>PSYCH 4992</u>	Cross-Cultural Psychology	3
<u>RUSSIAN 4360</u>	Russian Civilization	3
<u>MUSIC 1150</u>	Music Appreciation	3
<u>SP&M S 3235</u>	Intercultural Communication	3

Justification for
request

The intended course on this certificate should be Music 1151 Music of Latin America. Last time the certificate was edited, the course Music 1150 Music Appreciation: Music of Latin America was selected in error because course titles somewhat overlap. We request to remove Music 1150 and insert Music 1151 instead.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer
Comments

Program Change Request

Date Submitted: 01/13/26 12:06 pm

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

Last approved: 07/17/25 11:52 am

Last edit: 01/13/26 12:06 pm

Changes proposed by: Katie Shannon (shannonk)

Catalog Pages Using
this Program

[Biological Sciences](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	MED LAB
Department	Biological Sciences
Discipline	Biological Sciences
Title	

In Workflow

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

Approval Path

1. 01/14/26 10:05 am
Gina Yosten
(gyxmr): Approved for RBIOLSCI Chair
2. 01/20/26 9:35 am
Crystal Wilson
(wilsoncry): Approved for CCC Secretary
3. 01/30/26 1:51 pm
Katie Shannon
(shannonk): Approved for Sciences DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson
(wilsoncry): Approved for Pending CCC Agenda post
5. 02/18/26 1:34 pm

Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda

6. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

History

1. Apr 13, 2021 by
Katie Shannon
(shannonk)
2. Apr 14, 2021 by
Crystal Wilson
(wilsoncry)
3. Apr 15, 2021 by
Crystal Wilson
(wilsoncry)
4. Jun 14, 2022 by
Katie Shannon
(shannonk)
5. Mar 22, 2024 by
Evie Sherlock
(esdk3)
6. Mar 22, 2024 by
Evie Sherlock
(esdk3)
7. Oct 25, 2024 by
Katie Shannon
(shannonk)
8. Jul 1, 2025 by Katie
Shannon
(shannonk)
9. Jul 17, 2025 by
Crystal Wilson
(wilsoncry)

CIP Code

Program Requirements and Description

Bachelor of Science

Biological Sciences

Medical Laboratory Scientist Emphasis Area

Degree Requirements

The Medical Laboratory Scientist 3+1 emphasis area is designed for students who wish to earn a B.S. degree in Biological Sciences, and become board certified by the American Society of Clinical Pathologists as a Medical Laboratory Scientist. Students who pursue this emphasis area complete three years of course work at Missouri S&T. The fourth year of clinical/professional study takes place at an affiliated accredited school of medical technology. Students who wish to complete this emphasis area will apply to University affiliated clinical programs in their third year, and must be accepted into a clinical program in order to complete this emphasis area. Students who are interested in the MLS 3+1 emphasis area should seek advisement early in their degree program from the Biological Sciences MLS 3+1 emphasis area advisor in order to insure adherence to special program requirements. The Biological Science B.S. degree in the MLS 3+1 emphasis area must include a minimum of 38 semester hours of biological sciences course work plus an additional minimum of 32 hours of clinical program coursework. Humanities and Social Science courses must fulfill the Missouri S&T general education requirements applicable to the student's catalog year.

Required biological sciences courses:

<u>BIO SCI 1201</u>	Biological Sciences First Year Seminar	1
<u>BIO SCI 1113</u>	General Biology	3
or <u>BIO SCI 1213</u>	Principles of Biology	
<u>BIO SCI 1219</u>	General Biology Lab	1
<u>BIO SCI 1223</u> & <u>BIO SCI 1229</u>	Biodiversity and Biodiversity Lab	4
<u>BIO SCI 2213</u> & <u>BIO SCI 2219</u>	Cell Biology and Cell Biology Laboratory	4
<u>BIO SCI 2223</u>	General Genetics	3
<u>BIO SCI 3233</u>	Evolution	3

<u>BIO SCI 3313</u> & <u>BIO SCI 3319</u>	Microbiology and Microbiology Lab	5
<u>BIO SCI 4010</u>	Seminar	1
<u>BIO SCI 4020</u>	<u>Senior Service Project</u>	<u>1</u>
Selection of ten hours of additional advanced biological sciences courses should be informed by the recommendations of specific clinical affiliate programs. Suggested electives:		
<u>BIO SCI 3393</u>	Introductory Immunology for Medical Laboratory Science	3
<u>BIO SCI 1212</u>	Orientation to Medical Laboratory Science	1
<u>BIO SCI 5313</u>	Pathogenic Microbiology	3
<u>BIO SCI 5393</u>	Immunology	3
<u>BIO SCI 3359</u>	Physiology Lab	1
<u>BIO SCI 5493</u>	General Virology	3
Clinical program coursework typically includes a total of 32 credit hours, but may include more, depending on clinical affiliate program. Courses are enrolled at Missouri S&T from the following options in consultation with the MLS 3+1 emphasis area advisor:		
<u>BIO SCI 4900</u>	Clinical Chemistry	5-10
<u>BIO SCI 4901</u>	Clinical Microscopy	1-3
<u>BIO SCI 4902</u>	Hematology and Coagulation	5-8
<u>BIO SCI 4903</u>	Serology Immunology	2-4
<u>BIO SCI 4904</u>	Clinical Microbiology	5-9
<u>BIO SCI 4905</u>	Blood Bank Immunohematology	2-4
<u>BIO SCI 4906</u>	Topics in Medical Technology	1-8
20 semester hours of chemistry to include:		
<u>CHEM 1100</u>	Introduction To Laboratory Safety & Hazardous Materials	1
<u>CHEM 1310</u> & <u>CHEM 1319</u>	General Chemistry I and General Chemistry Laboratory	5
<u>CHEM 1320</u>	General Chemistry II	3
<u>CHEM 2210</u> & <u>CHEM 2219</u>	Organic Chemistry I and Organic Chemistry I Lab	4

<u>CHEM 2220</u>	Organic Chemistry II	4
& <u>CHEM 2229</u>	and Organic Chemistry II Lab	
<u>CHEM 4610</u>	General Biochemistry	3
2 semesters of College (Engineering) Physics and labs		
<u>PHYSICS 1145</u>	College Physics I	4
or <u>PHYSICS 1135</u>	Engineering Physics I	
<u>PHYSICS 2145</u>	College Physics II	4
or <u>PHYSICS 2135</u>	Engineering Physics II	
Math and Statistics		
<u>MATH 1120</u>	College Algebra	5
<u>STAT 3425</u>	Introduction to Biostatistics	4
12 semester hours of humanities, excluding foreign language, and to include:		
<u>ENGLISH 1120</u>	Exposition And Argumentation	3
<u>ENGLISH 1160</u>	Writing And Research	3
9 hours of social sciences, to include:		
<u>HISTORY 1200</u>	Modern Western Civilization	3
or <u>HISTORY 1300</u>	American History To 1877	
or <u>HISTORY 1310</u>	American History Since 1877	
or <u>POL SCI 1200</u>	American Government	

Justification for
request

removing Senior Seminar and adding Senior Service Learning

Attach Budget

System Approval
Letter

MDHE Approval

Supporting Documents [Department Email to Revise Med Lab.pdf](#)

Reviewer
Comments

Key: 377

Program Change Request

Date Submitted: 01/14/26 12:19 pm

Viewing: **MGTLEAD-CT : Management and Leadership**

Last approved: 04/30/24 10:17 am

Last edit: 02/18/26 1:23 pm

Changes proposed by: Cecil Eng Huang Chua (cecq8z)

Catalog Pages Using
this Program

[Business Administration](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	<u>Certificate</u>
Academic Level	<u>Graduate</u>
Program Code	MGTLEAD-CT
Department	<u>Business and</u> Information Science & Tech
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. 01/14/26 1:15 pm
Cassie Elrod (cassa):
Approved for
RINFSCTE Chair
2. 01/21/26 10:08 am
Crystal Wilson
(wilsoncry):
Approved for CCC
Secretary
3. 01/21/26 12:45 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson
(wilsoncry):
Approved for
Pending CCC
Agenda post

5. 02/18/26 1:34 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
6. 02/18/26 2:30 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. Mar 4, 2021 by Cecil
Eng Huang Chua
(cchua)
4. Apr 30, 2024 by
Cecil Eng Huang
Chua (cchua)

Management and Leadership

CIP Code

Intended Audience

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

[Main Campus Students](#)

Program Requirements and Description

Management and Leadership

This certificate is designed to prepare students to be the leaders of the future, by enabling them to manage through the use of technology. Understanding technology is becoming ever more critical in business as a tool used by efficient and effective managers. These leaders not only understand the managerial process and how to

inspire others, but also know how to harness technology to expedite the process. The certificate incorporates management theories, technological savvy, and leadership skills to create a student who is ready for the challenges of a fast paced managerial position.

A student admitted to this graduate certificate must complete four courses:

Choose four courses from the following list:

BUS 5580	Strategic Management
<u>BUS 5111</u>	Business Negotiations
<u>BUS 5150</u>	Customer Focus and Satisfaction
<u>BUS 5510</u>	<u>Corporate Entrepreneurship and Ecosystem Strategy</u>
<u>BUS 6121</u>	<u>Leadership</u>
<u>BUS 6425</u>	Supply Chain and Project Management
<u>ENG MGT 5320</u>	Project Management
<u>IS&T 5251</u>	Management and Leadership of Technological Innovation
<u>IS&T 6261</u>	Advanced Information Systems Project Management
<u>IS&T 6723</u>	Artificial Intelligence, Robotics, and Digital Transformation

Justification for
request

Repositioned to be in line with Kummer College focus on entrepreneurship

Attach Budget

System Approval Letter [Management and Leadership Revised Grad Cert Cover letter.pdf](#)
[Signed Revision Proposal Mgt & Leadership CT 10-23-25.pdf](#)
[Revised Grad Certificate Proposal Template-2-2023-mgtldr.docx](#)

MDHE Approval

Supporting Documents [Revised-Management and Leadership-BIT-approved.pdf](#)
[Grad Ed Management and Leadership Degree Audit.pdf](#)

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/20/26 11:45 am): Updated department to Business and Information Tech

Crystal Wilson (wilsoncry) (01/21/26 9:45 am): Attached degree audit from Grad Ed. Grad Ed is aware of the change. Moved BUS 5150 up in the list to be in numerical order with BUS courses.

Crystal Wilson (wilsoncry) (01/21/26 9:48 am): Moved IS&T 5251 up in list to place it in

numerical order with other IS&T courses.

Crystal Wilson (wilsoncry) (01/21/26 10:08 am): Per Dr. Raper, this is a minor change to go through the minor change process.

Program Change Request

New Program Proposal

Date Submitted: 12/17/25 2:52 pm

Viewing: **PROPOSED : Entertainment**

Technologies and Theatre (ET&T) CTU

Last edit: 01/28/26 9:27 am

Changes proposed by: Irina Ivliyeva (ivliyeva)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Certificate
CIM Prospectus	
Academic Level	Undergraduate
Program Code	PROPOSED
Department	Arts, Languages & Philosophy
Discipline	Theatre
Offered by	
Title	

In Workflow

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

Approval Path

1. 12/17/25 2:54 pm
Irina Ivliyeva (ivliyeva): Approved for RPHILOS Chair
2. 01/27/26 1:36 pm
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 01/29/26 1:18 pm
Alejandra Sobrado (asgx4): Approved for Arts & Humanities DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson (wilsoncry): Approved for

Pending CCC
Agenda post
5. 02/18/26 1:34 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
6. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

Entertainment Technologies and Theatre (ET&T) CTU

CIP Code 50.0502 - Technical Theatre/Theatre Design
and Technology.

Purpose

This certificate is designed for majors in any field who wish to enhance their understanding of technologies used in the entertainment industry and in theatre. The College of Arts, Sciences, and Education offers this certificate through the Department of Arts, Languages, and Philosophy. Courses offered by this department are listed below. The program blends creative expression with technical expertise and will serve as a bridge between STEM disciplines and creative industries, reinforcing the importance of technological innovation in entertainment and theatre.

Intended Audience

Main Campus Students

Program-Specific

Admission

Admission Requirements

A student must meet Missouri S&T's regular [undergraduate admission requirements](#).

Certificate Requirements

Achieve at least a 2.75 grade point average in all certificate course work.

Students must apply for the certificate by notifying the Theatre faculty advisor at least one full semester prior to graduation.

Request a certificate from the Registrar's Office within two calendar years of completing the required certificate course work.

Program Requirements and Description

Entertainment Technologies and Theatre (ET&T) CTU

Certificate Requirements (12 Credit Hours)

Students must take 4 different courses including 2 required courses and 2 additional elective courses.

REQUIREMENTS: Must take the following (6 hours)

<u>THEATRE 2200</u>	History of Entertainment Design	3
<u>THEATRE 3243</u>	Entertainment Design	3
ELECTIVE COURSES: Must take 2 ADDITIONAL courses with at least 1 course at 4XXX level.		
<u>THEATRE 2000</u>	Special Problems	3
<u>THEATRE 2143</u>	Stagecraft	3
<u>THEATRE 2425</u>	Principles of Stage Management	3
<u>THEATRE 4243</u>	Entertainment Design II	3
<u>THEATRE 4341</u>	Directing	3

OTHER PROGRAM INFORMATION

This list of courses is not exhaustive. Other courses with significant entertainment-related content may be substituted for those listed above upon approval of the Theatre advisor.

Justification for request

EXPECTED OUTCOMES

An expected outcome from offering the new Entertainment Technologies and Theatre (ET&T) undergraduate certificate is that students graduating from Missouri S&T with a STEM-focused degree who also have an interest in the entertainment industry will have an increased chance of getting a job in that sector.

The demand for entertainment technology expertise is steadily increasing due to the growing popularity of immersive and technologically advanced entertainment experiences.

Entertainment technology represents an interdisciplinary domain that integrates principles and practices from audio and sound deployment, lighting design, special effects, virtual and augmented reality, among other related areas. Drawing upon both artistic creativity and technical expertise, the field bridges performance, design, and emerging digital media to create immersive audience experiences. It involves the application of technical concepts, computer technologies, and design methodologies to the development and execution of live performances, themed environments, and interactive installations. As industry continues to evolve, entertainment technology plays a vital role in shaping the future by redefining the boundaries between art, science, and innovation.

There are very few Entertainment Technologies undergraduate degree programs in the country (and none in the Midwest), thus any S&T student with the Entertainment Technologies and Theatre (ET&T) certificate would be standing out as they enter the job market.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting Documents [ALP ET andT Certificate Proposal.pdf](#)
[MDHEWD Entr Technologies FORM.pdf](#)
[ET&T Certificate Approval Provost.pdf](#)
[UG Cert Entertainment Technologies and Theatre Proposal.pdf](#)

Reviewer

Comments

Jade McCain (jm558v) (12/22/25 11:40 am): Corrected formatting and added "PROPOSED" to program code.

Crystal Wilson (wilsoncry) (01/20/26 11:17 am): Corrected required course. Theatre 2000 was listed and it should have been Theatre 2200. Removed course list from DC as it should not be listed out. Added title of certificate to DC form.

Crystal Wilson (wilsoncry) (01/23/26 2:02 pm): Placed courses in numerical order.

Crystal Wilson (wilsoncry) (01/28/26 9:27 am): Attached supporting documents.

Program Change Request

Date Submitted: 01/16/26 9:51 pm

Viewing: **STU ART-MI : Studio Art Minor**

Last approved: 07/14/15 2:36 pm

Last edit: 01/16/26 9:51 pm

Changes proposed by: Irina Ivliyeva (ivliyeva)

Catalog Pages Using
this Program

[Art](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Minor
Academic Level	Undergraduate
Program Code	STU ART-MI
Department	Arts, Languages & Philosophy
Discipline	Art
Title	

In Workflow

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

Approval Path

1. 01/16/26 9:52 pm
Irina Ivliyeva (ivliyeva): Approved for RPHILOSO Chair
2. 01/20/26 11:22 am
Crystal Wilson (wilsoncry): Approved for CCC Secretary
3. 01/29/26 1:18 pm
Alejandra Sobrado (asgx4): Approved for Arts & Humanities DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson (wilsoncry): Approved for Pending CCC

- Agenda post
- 5. 02/18/26 1:35 pm
Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda
- 6. 02/18/26 2:30 pm
Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

History

- 1. Jul 14, 2015 by
pantaleoa

Studio Art Minor

CIP Code

Program Requirements and Description

Studio Art Minor

The studio art minor offers students the opportunity to pursue an area of focus in painting, drawing, photography, etc.

Requirements:

The minor requires 15 hours, including [ART 1180](#) Art Appreciation , which is a required course. Students may take additional 12 hours from these offerings:

ART 1120	Drawing I	3
ART 1140	Painting I	3
ART 1164	Sculpture	3
ART 1715	Popular Applied Arts	<u>3</u>
ART 2130	Advanced Drawing	3
ART 2150	Advanced Painting	3
ART 3203	Architectural Design I	3

Justification for
request

Adding Art 1715, approved with the permanent number by the CCC on May 13, 2025 to the list
of courses -- to expand offerings and satisfy student demand.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer
Comments

Program Change Request

Date Submitted: 01/09/26 9:54 am

Viewing: **TEACH-CTU : Teaching and Learning**

Undergraduate Certificate

Last approved: 07/01/25 1:05 pm

Last edit: 01/23/26 2:08 pm

Changes proposed by: Beth Kania-Gosche (bakm75)

Catalog Pages Using
this Program

[Education](#)

Effective Catalog Edition	FS2026-SP2027
Start Term	Fall 2026
Program Type	Certificate
Academic Level	Undergraduate
Program Code	TEACH-CTU
Department	Education
Discipline	Education
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. 01/10/26 10:00 am
Beth Kania-Gosche (bakm75):
Approved for
REDUCATION Chair
2. 01/23/26 2:08 pm
Crystal Wilson (wilsoncry):
Approved for CCC Secretary
3. 01/23/26 2:54 pm
Cecil Eng Huang Chua (cchua):
Approved for Social Sciences DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson (wilsoncry):
Approved for

Pending CCC

Agenda post

5. 02/18/26 1:35 pm

Hannah Johnson

(hjh9x): Approved

for CCC Meeting

Agenda

6. 02/18/26 2:30 pm

Cecil Eng Huang

Chua (cchua):

Approved for

Campus Curricula

Committee Chair

History

1. May 12, 2021 by
Beth Kania-Gosche
(bakm75)
2. Jun 14, 2021 by
Crystal Wilson
(wilsoncry)
3. Jul 1, 2025 by Beth
Kania-Gosche
(bakm75)

Teaching and Learning Undergraduate Certificate

CIP Code [13.1206 - Teacher Education, Multiple Levels.](#)

Intended Audience

Main Campus Students

Program Requirements and Description

Teaching and Learning Undergraduate Certificate

This certificate is designed to give students background in important educational concepts such as instructional design, learner engagement, assessment, diversity, and inclusion. This would be helpful for students who intend to work in higher education or nonprofit organizations as well as those who want to conduct industry training.

The courses in this certificate may be used to meet some of the requirements for teacher certification [programs.](#)

~~programs.~~ This certificate aligns with the Missouri Department of Elementary and Secondary Education requirements for a Temporary Authorization Certificate.

~~Students must meet regular Missouri S&T undergraduate admission requirements.~~ Certificate Requirements

A student must complete ~~have completed~~ the following courses.

~~courses, totaling 12 hours.~~

<u>EDUC 1074</u>	Foundations of Education in a Diverse Society	<u>3</u>
<u>EDUC 2310</u>	Education Of The Exceptional Child	<u>3</u>
<u>EDUC 3216</u>	Instructional Literacy in the Content Area	<u>3</u>
<u>EDUC 3340</u>	Assessment of Student Learning	<u>3</u>

Students must choose six hours of electives from the following list. These courses should align with the students' intended certification area.

<u>EDUC 2102</u>	<u>Educational Psychology</u>	<u>3</u>
<u>EDUC 3170</u>	<u>Teaching Reading and Writing in Middle/High School</u>	<u>3</u>
<u>EDUC 3215</u>	<u>Teaching Reading in Elementary and Early Childhood Settings</u>	<u>3</u>
<u>EDUC 3280</u>	<u>Instructional Strategies in the Content Area</u>	<u>3</u>
<u>EDUC 3335</u>	<u>Curriculum And Instruction Of The Middle School</u>	<u>3</u>
<u>EDUC 3430</u>	<u>Diverse Literature for Children</u>	<u>3</u>

Justification for
request

Certificates that are 18 credit hours are eligible for federal financial aid and other support if the program qualifies under certain criteria. If the certificate is aligned with a credential, a Temporary Authorization Certificate from the Missouri Department of Elementary and Secondary Education in this instance, then it can be used for Missouri Fast Track and other workforce development programs. The courses listed here are already taken by students in education degree and emphasis programs, so it will not add new courses. This change simply aligns the existing undergraduate certificate with the DESE Temporary Authorization Certificate requirements, allowing us to better track who is eligible.

Attach Budget

System Approval

Letter

MDHE Approval

Supporting

Documents

Reviewer

Comments

Crystal Wilson (wilsoncry) (01/21/26 10:19 am): Placed courses in numerical order.

Crystal Wilson (wilsoncry) (01/23/26 2:08 pm): Per Dr. Raper, this can go through the campus curriculum process and does not need to go to system or MDHE because they are not changing the required core courses.

Experimental Change Request

New Proposal

Viewing: **SPANISH 4001.007: Scientific Spanish**

Changes proposed by: Irina Ivliyeva (ivliyeva)

Requested Effective Date	Fall 2026
Department	Arts, Languages & Philosophy (RPHILOS0)
Discipline	Spanish (SPANISH)
Course Number	4001
Topic ID	007
Experimental Title	

Completed Workflow

1. **RPHILOS0 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. 12/21/25 1:54 pm
Irina Ivliyeva (ivliyeva): Approved for RPHILOS0 Chair
2. 12/22/25 10:31 am
Jade McCain (jm558v): Approved for CCC Secretary
3. 01/29/26 1:18 pm
Alejandra Sobrado (asgx4): Approved for Arts & Humanities DSCC Chair
4. 01/30/26 4:11 pm
Crystal Wilson (wilsoncry): Approved for Pending CCC

Agenda post

5. 02/18/26 1:36 pm

Hannah Johnson
(hjh9x): Approved
for CCC Meeting
Agenda

6. 02/18/26 2:30 pm

Cecil Eng Huang
Chua (cchua):
Approved for
Campus Curricula
Committee Chair

7. 02/19/26 1:21 pm

Evie Sherlock
(esdk3): Approved
for CAT entry

8. 02/19/26 1:21 pm

Evie Sherlock
(esdk3): Approved
for Registrar

History

1. **Feb 19, 2026 by
Irina Ivliyeva
(ivliyeva)**

Scientific Spanish

Experimental Scientific Spanish

Abbreviated Course

Title

Co-Listed Course

Instructors

Emilia Barbosa

Experimental

Catalog Description

This course develops advanced proficiency in Spanish scientific language used across STEM disciplines. Students expand their scientific and technical vocabulary while building practical

skills in processing scientific texts in Spanish at the Intermediate High to Advanced levels. Emphasis is placed on comprehension of discipline-specific terminology, accurate interpretation of complex concepts, and effective oral and written communication in professional and academic scientific contexts.

Prerequisite(s)

Spanish 1180 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 upper-level options for students interested in STEM-based vocabulary and discipline-specific texts; promote enrollment; satisfy student interest in practical application of Spanish language skills (reading, writing, listening, speaking). The Canvas shell for course development has been created by instructor already.

Reviewer

Comments

Jade McCain (jm558v) (12/22/25 10:31 am): Corrected prerequisite formatting and added grading basis.

Crystal Wilson (wilsoncry) (01/30/26 8:58 am): Assigned topic ID.