

Campus Curricula Committee Meeting Agenda

September 16th, 2025

8:15am - 9:30am, Parker Hall 203

(For Faculty Senate Meeting of October 16th, 2025)

Review of submitted Course Change forms:

File: 669 BIO SCI 3483 : Biomedical Problems

File: 2643 ECON 3512 : Mining Industry Economics

File: 2549 ELEC ENG 5620 : Signal Integrity in High-Speed Digital & Mixed Signal Design

Review of submitted Program Change forms:

File: 121 PRE LAW-MI : Pre Law Minor

File: 129 SCTCPL-MI : Science, Tech,& Politics Minor

Review of submitted Experimental Course forms:

File: 533 GEOPHYS 6001.004: Reservoir Seismology

File: 534 KC 5001.001: Team Innovation Projects

File: 535 KC 5001.002: Team Innovation Projects 2

File: 532 MS&E 5001.013: Applied Artificial Intelligence for Materials Engi

New Business:

Course Change Request

Date Submitted: 08/06/25 11:31 am

Viewing: **BIO SCI 3483 : Biomedical Problems**

Last approved: 04/25/14 3:05 pm

Last edit: 08/06/25 2:37 pm

Changes proposed by: Gina Yosten (gyxmr)

In Workflow

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

Approval Path

- 1. 08/06/25 11:32 am
Gina Yosten (gyxmr): Approved for RBIOLSCI Chair
- 2. 08/06/25 2:39 pm
Jade McCain (jm558v): Approved for CCC Secretary
- 3. 08/28/25 1:42 pm
Katie Shannon (shannonk): Approved for Sciences DSCC Chair
- 4. 09/02/25 10:33 am
Jade McCain (jm558v): Approved for Pending CCC Agenda post

History

- 1. Apr 25, 2014 by
Lahne Black (lahne)

Programs [BIOMED-MI: Biomedical Engineering Minor](#)
referencing this [BIOINV-CTU : BioInnovation CTU](#)
course

Requested Effective Date	Fall 2026
Department	Biological Sciences (RBIOLSCI)
Discipline	Biological Sciences (BIO SCI)
Course Number	3483
Title	Biomedical Problems
Abbreviated Course Title	Biomedical Problems
Co-Listed Course	

Catalog Description

This course will use a problem-based learning approach to examine biological aspects of various medical conditions. Students will work in groups and individually to answer problems related to diagnostic testing and evaluation of diseases and other medical conditions.

Prerequisite(s):

Bio Sci [2213](#) ~~3333~~ or [Bio Sci 2223](#). ~~3343~~.

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

No

Communication
Emphasized

No

Grading Basis

Graded

Repeatable

No

Justification

Change of pre-requisites requested since current pre-reqs are unnecessary for student success and a hinderence for enrollment.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer

Comments

Jade McCain (jm558v) (08/06/25 12:30 pm): Corrected prerequisite format, changed effective requested date to Spring 2025, selected "yes" for elective for majors. Selected "no" for Communication Intensive and Communication Emphasized.

Jade McCain (jm558v) (08/06/25 2:37 pm): Changed the requested effective date to Fall 2026 per this is an affecting change.

Key: 669

[Preview Bridge](#)

Course Change Request

Date Submitted: 07/11/25 3:01 pm

Viewing: **ECON 3512 : Mining Industry Economics**

Also listed as: **MIN ENG 3512**

Last edit: 07/23/25 9:30 am

Changes proposed by: Kwame Awuah-Offei (kabp3)

Programs referencing this course	ECON 3512: GS ECON-MI: Global Sustainable Economics Minor ECON-BA: Economics BA ECON-BS: Economics BS Q ECON-MI: Quantitative Economics Minor MI ENG-BS: Mining Engineering BS MIN ENG 3512: GS ECON-MI: Global Sustainable Economics Minor GE ENG-BS: Geological Engineering BS E ECON-CTU: Energy Economics - CTU
Other Courses referencing this course	In The Catalog Prerequisites: MIN ENG 3512: MIN ENG 6522 : Mining Property Feasibility Studies And Evaluation Procedure

Requested Effective Date	Spring 2026
Department	Economics (RECONOMI)
Discipline	Economics (ECON)
Course Number	3512
Title	Mining Industry Economics
Abbreviated Course Title	Mining Industry Economics
Co-Listed Course	MIN ENG 3512 Department

Catalog Description	Importance of the mineral industry to national economy, uses, distribution, and trade of economic minerals, time value of money, mineral taxation, economic evaluation utilizing depreciation, depletion, and discounted cashflow concepts, social and economical significance of mineral resources.
Prerequisite(s):	Econ 1100 or 1200.
Corequisite(s):	

In Workflow

1. RECONOMI Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Social Sciences 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. 09/05/19 1:45 pm
ershenb: Rollback to Initiator
2. 07/23/25 9:27 am
Melody Lo (mlc2d): Approved for RECONOMI Chair
3. 07/23/25 9:33 am
Jade McCain (jm558v): Approved for CCC Secretary
4. 08/30/25 5:52 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
5. 08/30/25 5:55 pm
Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
6. 09/02/25 10:33 am
Jade McCain (jm558v): Approved for Pending CCC

Credit Hours

Credit Hours	Credit Type	Credit Hours
	Lecture	3

Total: 3

Required for Majors No

Elective for Majors No

Communication No

Intensive

Communication Yes

Emphasized

Grading Basis Graded

Repeatable No

Justification Revising to streamline our communication emphasized courses.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer **ershenb (09/05/19 1:45 pm):** Rollback: test

Comments **Jade McCain (jm558v) (07/23/25 9:30 am):** Selected "no" for Communication Intensive.

Course Change Request

Date Submitted: 08/07/25 9:35 am

Viewing: ELEC ~~COMP~~ ENG 5620 : Signal Integrity in High-Speed Digital & Mixed Signal Design

Also listed as: ~~COMP-ENG-5620~~

Formerly known as: COMP ENG 5620

Last approved: 07/31/24 6:05 am

Last edit: 09/02/25 8:24 am

Changes proposed by: R.Joe Stanley (stanleyj)

In Workflow

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

Approval Path

- 1. 08/07/25 10:29 am
Jonathan Kimball (kimballjw): Approved for RELECENG Chair
- 2. 08/18/25 2:02 pm
Jade McCain (jm558v): Approved for CCC Secretary
- 3. 08/30/25 5:53 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
- 4. 09/02/25 10:33 am
Jade McCain (jm558v): Approved for Pending CCC Agenda post

Requested Effective Date	Spring 2026	
Department	Electrical & Computer Engr (RELECENG)	
Discipline	<u>Electrical</u> Computer Engineering (<u>ELEC</u> COMP ENG)	
Course Number	5620	
Title	Signal Integrity in High-Speed Digital & Mixed Signal Design	
Abbreviated Course Title	Signal Integrity	
Co-Listed Course	ELEC-ENG-5620	Department Electrical & Computer Engr (RELECENG)

Catalog Description
Signal integrity ensures signals transmitted over a propagation path maintain sufficient fidelity for proper receiver operation. Compromised signal integrity is often associated with parasitics (e.g. unintentional inductance, capacitance). Theory and CAD tools used for signal integrity analysis of functioning designs.

Prerequisite(s):
Elec Eng 3600 or Comp Eng 3150, and senior ~~Senior~~ standing.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized No

Grading Basis Graded

Repeatable No

Justification Eliminate Comp Eng 5620 as a co-list with Elec Eng 5620 because computer engineering students do not have the necessary background to take this course even if the course prerequisites are met.

History

1. May 24, 2016 by R.Joe Stanley (stanleyj)
2. Jul 31, 2024 by Jade McCain (jm558v)

Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer **Jade McCain (jm558v) (08/18/25 1:55 pm):** Made ELEC ENG 5620 the primary course and removed COMP ENG 5620 as a co-list per department request. Selected "no" for communication intensive and communication emphasized.

Key: 2549

[Preview Bridge](#)

Program Change Request

A deleted record cannot be edited

Program Inactivation Proposal

Date Submitted: 08/25/25 10:32 am

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

Last approved: 03/27/24 9:37 am

Last edit: 08/27/25 11:48 am

Changes proposed by: Shannon Fogg (sfogg)

Catalog Pages Using
this Program
[Prelaw](#)

Final Catalog FS2026-SP2027

Rationale for
Inactivation

In Workflow

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

Approval Path

1. 08/25/25 10:36 am
Shannon Fogg
(sfogg): Approved
for RHISTORY Chair
2. 08/27/25 11:48 am
Jade McCain
(jm558v): Approved
for CCC Secretary
3. 08/29/25 2:44 pm
Alejandra Sobrado
(asgx4): Approved
for Arts &
Humanities DSCC
Chair
4. 09/02/25 10:33 am
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

History

1. Feb 27, 2018 by
Petra Dewitt
(dewittp)
2. Jun 14, 2022 by
Petra Dewitt
(dewittp)
3. Mar 27, 2024 by
Evie Sherlock
(esdk3)

We have created a Pre-Law Undergraduate Certificate, which is now available in the catalog for students. This certificate replaces the minor.

Supporting
Documents

Effective Catalog Edition	FS2026-SP2027
Start Term	
Program Type	
Academic Level	
Program Code	PRE LAW-MI
Department	History & Political Science
Discipline	Political Science
Title	
Pre Law Minor	
CIP Code	

Program Requirements and Description

Prelaw Minor

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

<u>PHILOS 1115</u>	Logic and Reasoning: An Introduction	3
Select two of the following:		6
<u>HISTORY 1300</u>	American History To 1877	
<u>HISTORY 1310</u>	American History Since 1877	
<u>POL SCI 1200</u>	American Government	
<u>PHILOS 1105</u>	Self and World: Introduction To Philosophy	
Select three of the following:		9
<u>ENGLISH 2410</u>	Theory Of Written Communication	
<u>ENGLISH 3101</u>	Advanced Composition	
<u>HISTORY 2510</u>	History of Technology	
<u>HISTORY 2791</u>	Historical Research Methods	
<u>HISTORY 3530</u>	History of Science	
<u>HISTORY 4470</u>	American Environmental History	
<u>HISTORY 4790</u>	Historiography	

<u>PHILOS 3235</u>	Business Ethics
<u>PHILOS 4340</u>	From Activism to Zoos: Issues in Social Ethics
<u>PHILOS 4345</u>	Philosophy Of Science
<u>PHILOS 4350</u>	Environmental Ethics and Justice
<u>PHILOS 4360</u>	Who Should Rule and Why? Debates in Political Philosophy
<u>POL SCI 3300</u>	Principles Of Public Policy
<u>POL SCI 3310</u>	Public Policy Analysis
<u>POL SCI 3760</u>	The American Presidency
<u>POL SCI 3763</u>	Contemporary Political Thought
May substitute ONE of these three courses with one of the following with the approval of the advisor:	
<u>BUS 1210</u>	Financial Accounting
<u>BUS 2910</u>	Business Law
<u>COMP SCI 4700</u>	Intellectual Property For Computer Scientists
<u>IS&T 5168</u> / <u>PHILOS 4368</u>	<u>Course IS&T 5168 Not Found</u>
<u>ECON 4430</u>	Cost-Benefit Analysis
<u>ECON 4820</u>	Labor Economics
<u>ENG MGT 5514</u>	Patent Law
<u>ENG MGT 5512</u>	Legal Environment
<u>ETYM 4306</u>	Introduction To Etymology

Justification for
request

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Jade McCain (jm558v) (08/27/25 11:48 am): Changed Final Catalog term to FS 2026 - SP 2027 per CCC deadlines.

Program Change Request

A deleted record cannot be edited

Program Inactivation Proposal

Date Submitted: 08/25/25 10:33 am

Viewing: **SCTCPL-MI : Science, Tech,& Politics Minor**

Last approved: 05/16/16 2:59 pm

Last edit: 08/27/25 11:49 am

Changes proposed by: Shannon Fogg (sfogg)

Catalog Pages Using
this Program

[History](#)

[Political Science](#)

Final Catalog FS2026-SP2027

Rationale for
Inactivation

In Workflow

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

Approval Path

- 1. 08/25/25 10:36 am
Shannon Fogg
(sfogg): Approved
for RHISTORY Chair
- 2. 08/27/25 11:49 am
Jade McCain
(jm558v): Approved
for CCC Secretary
- 3. 08/29/25 2:45 pm
Alejandra Sobrado
(asgx4): Approved
for Arts &
Humanities DSCC
Chair
- 4. 09/02/25 10:33 am
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

History

1. Jul 21, 2015 by
pantaleoa
2. May 16, 2016 by
pantaleoa

We have created a Science, Technology, and Society undergraduate certificate that replaces the minor.

Supporting
Documents

Effective Catalog Edition	FS2026-SP2027
Start Term	
Program Type	
CIM Prospectus	
Academic Level	
Program Code	SCTCPL-MI
Department	History & Political Science
Discipline	
Offered by	
Title	Science, Tech,& Politics Minor
CIP Code	

Purpose

Intended Audience

Program-Specific
Admission

Program Requirements and Description

Science, Technology and Humanity Minor

The science, technology and humanity (STH) minor is designed for students who want to explore the relationship between history, political science, and science and technology. The minor is particularly useful for technologically oriented students, because it provides insight into humanities and social science disciplines. It also shows how these disciplines interact with science and technology, thereby broadening their horizon of thought and action and preparing them for an increasingly technologically oriented future. To minor in STH the student must complete one of the following history survey courses: [HISTORY 1100](#) or [HISTORY 1200](#) or [HISTORY 1300](#) or [HISTORY 1310](#); and [POL SCI 1200](#). The student then must take either [HISTORY 2510](#) or [HISTORY 3530](#). After completing the required six hours, the student will select nine additional hours from the list below.

15 credit hours total.

Students must take one of the following:	3
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HISTORY 1100	Early Western Civilization	3
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HISTORY 1200	Modern Western Civilization	3
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HISTORY 1300	American History To 1877	3
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HISTORY 1310	American History Since 1877	3
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POL SCI 1200	American Government	3
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Students must take one of the following:	3
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HISTORY 2510	History of Technology	3
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HISTORY 3530	History of Science	3
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Student must take three of the following as approved by minor advisor:	9
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BIO SCI 1163	Biotechnology in Film	3
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BIO SCI 2263	Ecology	3
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ECON 4540	Energy Economics	3
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ECON 4820	Labor Economics	3
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ENG MGT 4330/ PSYCH 4710	Human Factors	3
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<u>ENGLISH 2243</u>	Science Fiction	3
<u>ENV ENG 5640</u>	Environmental Law And Regulations	3
<u>GEO ENG 1175</u>	Geological Engineering in Popular Media	3
<u>HISTORY 2510</u>	History of Technology	3
<u>HISTORY 3510</u>	Twentieth Century Technology And Society	3
<u>HISTORY 3530</u>	History of Science	3
<u>HISTORY 3443</u>	The American Military Experience	3
<u>HISTORY 4470</u>	American Environmental History	3
<u>HISTORY 4550</u>	Architecture, Technology and Society; 1750 to Present	3
<u>IS&T 5251</u>	Management and Leadership of Technological Innovation	3
<u>IS&T 5885</u>	Human-Computer Interaction and User Experience	3
<u>PHILOS 3223</u>	Bioethics	3
<u>PHILOS 3225</u>	Engineering Ethics	3
<u>PHILOS 4320</u>	Minds And Machines	3
<u>PHILOS 4345</u>	Philosophy Of Science	3
<u>PHILOS 4350</u>	Environmental Ethics and Justice	3
<u>POL SCI 3300</u>	Principles Of Public Policy	3
<u>PSYCH 4700</u>	Industrial Psychology	3
<u>PSYCH 4710</u>	Human Factors	3
<u>PSYCH 4720</u>	Psychology of Social Technology	3
<u>TCH COM 5610</u>	History of Technical Communication	3

Justification for
request

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Jade McCain (jm558v) (08/27/25 11:49 am): Changed Final Catalog term to FS 2026 - SP 2027 per CCC deadlines.

Experimental Change Request

New Proposal

Date Submitted: 08/15/25 4:33 pm

Viewing: **GEOPHYS 6001.004: Reservoir Seismology**

Last edit: 09/02/25 9:22 am

Changes proposed by: Kelly Liu (liukh)

Requested Effective Date

Spring 2026

Department

Earth Sciences and Engineering (RGEOSENG)

Discipline

Geophysics (GEOPHYS)

Course Number

6001

Topic ID

004

Experimental Title

Reservoir Seismology

Experimental Abbreviated Course Title

Reserv Seism

Co-Listed Course

Instructors

Kelly Liu

Experimental Catalog Description

The course covers applications of seismic methods for reservoir characterization and monitoring, with an emphasis on seismic attributes. Key topics include amplitude variation with offset analysis, time-lapse (4D) seismology, and wave propagation in porous media. Students will develop the skills to analyze and interpret seismic attributes to evaluate lithology, fluid content, and reservoir architecture. Practical, hands-on exercises using interactive software tools reinforce theoretical concepts and build proficiency in real-world seismic data interpretation.

Prerequisite(s)

Geophys 3210, or equivalent.

Corequisite(s)

Field Trip Statement

In Workflow

- 1. RGEOSENG Chair
- 2. CCC Secretary
- 3. Engineering DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. CAT entry
- 8. Registrar

Approval Path

- 1. 08/15/25 4:31 pm
Stephen Gao (sgao): Rollback to Initiator
- 2. 08/15/25 4:34 pm
Stephen Gao (sgao): Approved for RGEOSENG Chair
- 3. 08/18/25 11:35 am
Jade McCain (jm558v): Approved for CCC Secretary
- 4. 08/30/25 5:53 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
- 5. 09/02/25 10:33 am
Jade McCain (jm558v): Approved for Pending CCC Agenda post

Credit Hours	Credit Type	Credit Hours
	Lecture	1
	Laboratory	2

Total:	3
Required for Majors	No
Elective for Majors	Yes
Grading Basis	Graded
Repeatable	No
Justification for experimental course:	This course equips students with essential skills to apply seismic methods for reservoir characterization and monitoring. It prepares students to interpret subsurface properties and address industry needs beyond exploration. Hands-on training with modern software tools reinforces practical expertise.
Reviewer	Stephen Gao (sgao) (08/15/25 4:31 pm): Rollback: Change pre-req.
Comments	Jade McCain (jm558v) (08/18/25 11:35 am): Corrected formatting and added grading basis. Jade McCain (jm558v) (09/02/25 9:22 am): Added Topic ID.

Experimental Change Request

New Proposal

Date Submitted: 08/19/25 8:41 am

Viewing: **KC 5001.001: Team Innovation Projects**

Last edit: 08/29/25 4:05 pm

Changes proposed by: David Enke (enke)

Requested Effective Date Spring 2026

Department Kummer College (RKUMR)

Discipline Kummer College (KC)

Course Number 5001

Topic ID 001

Experimental Title
Team Innovation Projects

Experimental Team Innovation Projects

Abbreviated Course
Title

Co-Listed Course

Instructors
TBD

Experimental
Catalog Description

This capstone course provides students with an immersive, team-based experience in cross-disciplinary innovation. Students collaborate in diverse, interdisciplinary teams to identify opportunities, develop innovative solutions, and translate them into actionable business or societal impact. Drawing on principles of design thinking, lean startup methodology, systems innovation, AI, information systems, and project management, teams will address real-world challenges aligned with economic development, sustainability, or emerging technologies. Students will engage with industry mentors, conduct stakeholder interviews, iterate prototypes/solutions, and deliver a final pitch/presentation to a panel of faculty and external reviewers.

Prerequisite(s) Program or instructor approval. Open to students from all Missouri S&T programs and disciplines with instructor approval.

Corequisite(s)

Field Trip
Statement

Credit Hours

	Credit Type	Credit Hours
Lecture		1.5
Laboratory		1.5

In Workflow

1. RKUMR Chair
2. CCC Secretary
3. Social Sciences DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. CAT entry
8. Registrar

Approval Path

1. 08/19/25 8:56 am
David Enke (enke):
Approved for
RKUMR Chair
2. 08/19/25 11:15 am
Jade McCain
(jm558v): Approved
for CCC Secretary
3. 08/19/25 12:35 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 09/02/25 10:33 am
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Total:	3
Required for Majors	No
Elective for Majors	Yes
Grading Basis	Graded
Repeatable	No
Justification for experimental course:	This course was offered in the fall as ENG MGT 5001 (with co-listings), but will now move to the KC designation. The course embodies the Kummer College's mission to prepare leaders who transform ideas into scalable solutions that drive innovation, entrepreneurship, and economic development. The interdisciplinary nature of the course will allow all students at Missouri S&T to have the opportunity to contribute to the building of an entrepreneurial ecosystem while learning and utilizing critical management, business, and technical skills.
Reviewer	Jade McCain (jm558v) (08/19/25 11:15 am): Corrected formatting and added grading basis.
Comments	Jade McCain (jm558v) (08/29/25 4:05 pm): Added Topic ID.

Experimental Change Request

New Proposal

Date Submitted: 08/19/25 8:54 am

Viewing: **KC 5001.002: Team Innovation Projects 2**

Last edit: 08/29/25 4:06 pm

Changes proposed by: David Enke (enke)

Requested Effective Date Spring 2026

Department Kummer College (RKUMR)

Discipline Kummer College (KC)

Course Number 5001

Topic ID 002

Experimental Title
Team Innovation Projects 2

Experimental Team Innov Projects 2

Abbreviated Course
Title

Co-Listed Course

Instructors
TBD

Experimental
Catalog Description

This capstone course extension (for projects that are two semesters) provides students with an immersive, team-based experience in cross-disciplinary innovation. Students collaborate in diverse, interdisciplinary teams to identify opportunities, develop innovative solutions, and translate them into actionable business or societal impact. Drawing on principles of design thinking, lean startup methodology, systems innovation, AI, information systems, and project management, teams will address real-world challenges aligned with economic development, sustainability, or emerging technologies. Students will engage with industry mentors, conduct stakeholder interviews, iterate prototypes/solutions, and deliver a final pitch/presentation to a panel of faculty and external reviewers.

Prerequisite(s) Program or instructor approval. Open to students from all Missouri S&T programs and disciplines with instructor approval.

Corequisite(s)

Field Trip
Statement

Credit Hours	Credit Type	Credit Hours
	Lecture	1.5
	Laboratory	1.5

In Workflow

1. RKUMR Chair
2. CCC Secretary
3. Social Sciences DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. CAT entry
8. Registrar

Approval Path

1. 08/19/25 8:56 am
David Enke (enke):
Approved for
RKUMR Chair
2. 08/19/25 11:17 am
Jade McCain
(jm558v): Approved
for CCC Secretary
3. 08/19/25 12:35 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 09/02/25 10:33 am
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Total:	3
Required for Majors	No
Elective for Majors	Yes
Grading Basis	Graded
Repeatable	No
Justification for experimental course:	This course (for projects that are two semesters) embodies the Kummer College's mission to prepare leaders who transform ideas into scalable solutions that drive innovation, entrepreneurship, and economic development. The interdisciplinary nature of the course will allow all students at Missouri S&T to have the opportunity to contribute to the building of an entrepreneurial ecosystem while learning and utilizing critical management, business, and technical skills.
Reviewer	Jade McCain (jm558v) (08/19/25 11:17 am): Corrected formatting and added grading basis.
Comments	Jade McCain (jm558v) (08/29/25 4:06 pm): Added Topic ID.

Experimental Change Request

New Proposal

Date Submitted: 07/22/25 1:21 pm

Viewing: **MS&E 5001.013: Applied Artificial Intelligence for Materials Engi**

Last edit: 09/02/25 9:30 am

Changes proposed by: David Lipke (lipked)

Requested Effective Date	Spring 2026				
Department	Materials Science & Engineering (RMATSENG)				
Discipline	Materials Science & Engineering (MS&E)				
Course Number	5001				
Topic ID	013				
Experimental Title	Applied Artificial Intelligence for Materials Engi				
Experimental Abbreviated Course Title	Applied AI Mater Eng				
Co-Listed Course					
Instructors	Kelley Wilkerson, Joshua Wilkerson				
Experimental Catalog Description	This course provides an introduction to programming, data structures, and libraries as a foundation for machine learning and deep learning. Students will learn fundamental programming concepts, data manipulation, data visualization, and the use of data analytics and AI/ML tools. The curriculum emphasizes practical applications in materials science, including handling and analyzing datasets, visualizing experimental data, and predicting material properties. Students will apply their acquired skills to real-world materials science problems, demonstrating their ability to integrate programming and machine learning techniques.				
Prerequisite(s)	Comp Sci 1500, prior programming experience, or permission of instructor.				
Corequisite(s)					
Field Trip Statement					
Credit Hours	<table><thead><tr><th>Credit Type</th><th>Credit Hours</th></tr></thead><tbody><tr><td>Lecture</td><td>3</td></tr></tbody></table>	Credit Type	Credit Hours	Lecture	3
Credit Type	Credit Hours				
Lecture	3				
Total:	3				

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. CAT entry
- 8. Registrar

Approval Path

- 1. 07/22/25 5:26 pm
Michael Moats (moatsm): Approved for RMATSENG Chair
- 2. 07/23/25 9:29 am
Jade McCain (jm558v): Approved for CCC Secretary
- 3. 08/30/25 5:53 pm
Theresa Swift (thswift): Approved for Engineering DSCC Chair
- 4. 09/02/25 10:33 am
Jade McCain (jm558v): Approved for Pending CCC Agenda post

Required for Majors	No
Elective for Majors	Yes
Grading Basis	Graded
Repeatable	No
Justification for experimental course:	Recent graduates from the Materials Science and Engineering Department have indicated a curricular need for better understanding how to utilize artificial intelligence in the workplace. This course aims to fill this by equipping students with foundational programming and AI/ML skills tailored to materials engineering challenges. Since the field is so broad, offering a course tailored toward their specific disciplinary needs is important. As data-driven methods become essential for materials discovery, characterization, and optimization, students must be prepared to work with complex datasets and predictive models. By focusing on practical applications this course bridges the gap between traditional materials science and emerging AI tools helping them apply machine learning in real-world research and industry settings.
Reviewer	Jade McCain (jm558v) (07/23/25 9:09 am): Added grading basis and punctuation.
Comments	Jade McCain (jm558v) (09/02/25 9:30 am): Added Topic ID.