

Campus Curricula Committee Meeting Agenda

April 1st, 2025

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

(For Faculty Senate Meeting of April 24th, 2025)

Review of submitted Course Change forms:

File: 10242	BIO SCI 1212 : Orientation to Medical Laboratory Science
File: 10243	BIO SCI 3393 : Introductory Immunology for Medical Laboratory Science
File: 5615	BIO SCI 4323 : Molecular Biology
File: 5617	BIO SCI 4329 : Molecular Genetics Laboratory
File: 10251	BUS 5920 : Artificial Intelligence: Law, Governance, and Policy
File: 475	COMP ENG 3110 : Computer Organization and Design
File: 4942	ECON 3300 : Introduction to Econometrics
File:10237	ECON 5338 : Innovation and Value Generation
File: 4941	ECON 5360 : Data Driven Strategic Insights
File: 10212	ECON 5543 : Innovation Economics and Finance
File: 10221	ECON 5648 : Innovation to Market
File: 10217	ECON 5658 : Building Sustainability and Environmental, Social and Governance (ESG)
File: 10225	ECON 6020 : Contemporary Issues in Technology and Innovation
File: 10229	ECON 6030 : Contemporary Issues in Energy Economics
File: 10232	ECON 6301 : Microeconomics: Managerial and Project Economics
File: 10236	ECON 6302 : Macroeconomics: Navigating Risks and Trends
File: 10234	ECON 6355 : Econometrics and Forecasting
File: 10208	ECON 6638 : Energy Policy and Economic Analysis
File: 941	EDUC 2211 : Child Development
File: 10195	EDUC 3170 : Teaching Reading and Writing in Middle/High School
File: 10246	ENV SCI 3213 : One Health Basics
File:284	PHYSICS 1145 : College Physics

Review of submitted Program Change forms:

File: 151	CHEM-BA : Chemistry BA
File: 36	DSCMGMT-MI : Digital Supply Chain Mgt Minor
File: 344	EDUC-BS : Education BS
File: 49	ERP-MI : Enterprise Resource Plan Minor
File: 377	MED LAB : Biological Sciences BS with Emphasis area in Medical Laboratory Scientist
File: 418	PROPOSED : Economics and Innovation MS
File: 420	PROPOSED : Energy Economics and Global Sustainability CT
File: 421	PROPOSED : Pre-Law CTU
File: 419	PROPOSED : Value-driven Innovation CT
File: 375	SCITEC-CTU : Science, Technology, and Society CTU

Review of submitted Experimental Course forms:

File: 507 BIO SCI 6001.020: Advanced Molecular Biology
File: 508 BIO SCI 6001.021: Advanced Molecular Genetics Lab
File: 509 COMP SCI 6001.075: Large Language Models
File: 510 FRENCH 3001.006: Language of Tomorrow: French Sci-Fi and the Art of Translation

New Business:

- CCC Calendars

Course Change Request

New Course Proposal

Date Submitted: 02/20/25 12:05 pm

Viewing: **BIO SCI 1212 : Orientation to Medical Laboratory Science**

Last edit: 02/20/25 2:46 pm

Changes proposed by: Katie Shannon (shannonk)

Programs
referencing this
course

[MED LAB: Biological Sciences BS with Emphasis area in Medical Laboratory Scientist](#)

Requested Effective Date	Fall 2025
Department	Biological Sciences (RBIOLSCI)
Discipline	Biological Sciences (BIO SCI)
Course Number	1212
Title	Orientation to Medical Laboratory Science
Abbreviated Course Title	Orientation MLS
Co-Listed Course	

Catalog Description
The class is designed to give prospective Medical Laboratory Science students clinical experience in the field of Clinical/Medical Laboratory Science.

Prerequisite(s):
Enrollment in Biological Sciences BS with Emphasis area in Medical Laboratory Scientist.

Corequisite(s):

Credit Hours		
Credit Hours	Credit Type	Credit Hours
	Recitation/Seminar/Discussion	1
Total:	1	

Required for Majors No

Elective for Majors Yes

- 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. 02/20/25 1:05 pm
David Duvernell (duvernelld):
Approved for
RBIOLSCI Chair

2. 02/20/25 2:46 pm
Jade McCain (jm558v): Approved
for CCC Secretary

3. 03/18/25 1:17 pm
Katie Shannon (shannonk):
Approved for
Sciences DSCC Chair

4. 03/21/25 2:26 pm
Jade McCain (jm558v): Approved
for Pending CCC
Agenda post

Communication Intensive

No

Communication Emphasized

No

Grading Basis

Graded

Repeatable

No

Justification

Gives our MLS students access to online course from Mizzou.

Semesters Previously Offered

Term(s) Offered as experimental

Previous Course Code

Is this a MOTR Course?

Reviewer

Jade McCain (jm558v) (02/20/25 2:22 pm): Removed discipline from course number.

Comments

Jade McCain (jm558v) (02/20/25 2:41 pm): Added punctuation and capitalization.

Course Change Request

New Course Proposal

Date Submitted: 02/20/25 12:08 pm

Viewing: **BIO SCI 3393 : Introductory Immunology for Medical Laboratory Science**

Last edit: 03/19/25 1:18 pm

Changes proposed by: Katie Shannon (shannonk)

Programs referencing this course

[MED LAB: Biological Sciences BS with Emphasis area in Medical Laboratory Scientist](#)

Requested Effective Date	Fall 2025
Department	Biological Sciences (RBIOLSCI)
Discipline	Biological Sciences (BIO SCI)
Course Number	3393
Title	Introductory Immunology for Medical Laboratory Science
Abbreviated Course Title	Intro Immunology for MLS
Co-Listed Course	

Catalog Description

This course offers an in-depth exploration of immunology tailored for students pursuing degrees in Medical Laboratory Science and other health-related professions. It covers essential principles, including innate and adaptive immunity, antigen recognition by T and B cells, lymphocyte development, antibody functions, and cell-mediated immune responses. The course also addresses immunological disorders such as autoimmunity and allergies, vaccination principles, and emerging immunotherapy approaches for cancer and autoimmune diseases. Designed to meet the specific needs of students preparing for careers in medical laboratory science, this course equips learners with a robust understanding of immunological concepts crucial for advanced studies and clinical practice.

Prerequisite(s):

Enrollment in Biological Sciences BS with Emphasis area in Medical Laboratory Scientist and Bio Sci 1113 or Bio Sci 1213 or Bio Sci 2213.

Corequisite(s):

Credit Hours		
Credit Hours	Credit Type	Credit Hours

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. 02/20/25 1:06 pm David Duvernell (duvernelld): Approved for RBIOLSCI Chair
- 2. 02/20/25 2:46 pm Jade McCain (jm558v): Approved for CCC Secretary
- 3. 03/18/25 1:17 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
- 4. 03/21/25 2:26 pm Jade McCain (jm558v): Approved for Pending CCC Agenda post

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 Gives our MLS students access to online course from Mizzou.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer **Jade McCain (jm558v) (02/20/25 2:22 pm):** Removed discipline from course number.

Comments **Jade McCain (jm558v) (02/20/25 2:43 pm):** Added capitalization and punctuation.

Key: 10243

[Preview Bridge](#)

Course Change Request

Date Submitted: 02/20/25 12:25 pm

Viewing: **BIO SCI 4323 : Molecular Biology Genetics**

Last edit: 02/20/25 12:25 pm

Changes proposed by: Katie Shannon (shannonk)

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. 02/20/25 1:02 pm
David Duvernell (duvernell):
Approved for
RBIOLSCI Chair
- 2. 02/21/25 11:47 am
Jade McCain (jm558v): Approved
for CCC Secretary
- 3. 03/18/25 1:17 pm
Katie Shannon (shannonk):
Approved for
Sciences DSCC Chair
- 4. 03/21/25 2:26 pm
Jade McCain (jm558v): Approved
for Pending CCC
Agenda post

BIOINFO-MI: Bioinformatics Minor
CH ENG-BS: Chemical Engineering BS
BIOMED-MI: Biomedical Engineering Minor
EV ENG-BS: Environmental Engineering BS

Justification for this

Requested Effective Date: Fall 2025
Department: Biological Sciences (RBIOLSCI)
Discipline: Biological Sciences (BIO SCI)
Course Number: 4323
Title: Molecular Biology Genetics
Abbreviated Course Title: Molecular Biology Genetics
Co-Listed Course:

Catalog Description
A study of the properties and functions of DNA and RNA that make these macromolecules fundamental to life. this macromolecule unique in the universe. Examples of replication, transcription, translation, repair, and regulation will be examined in viruses, prokaryotes, and eukaryotes, along with applications such as molecular diagnostics, gene expression analysis, sequencing, transgenes, and gene editing. ~~eukaryotes.~~

Prerequisite(s):
Bio Sci 2223 and Bio Sci 2213.

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 Molecular Genetics is a subdiscipline of Molecular Biology. Changing the name to Molecular Biology broadens the scope of this class to include RNA as well as DNA.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course

Is this a MOTR
Course?

Reviewer
Comments

Key: 5615

[Preview Bridge](#)

Course Change Request

Date Submitted: 02/20/25 12:32 pm

Viewing: **BIO SCI 4329 : Molecular Genetics Laboratory**

Last edit: 02/20/25 12:32 pm

Changes proposed by: Katie Shannon (shannonk)

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. 02/20/25 1:03 pm
David Duvernell (duvernell):
Approved for
RBIOLSCI Chair
- 2. 02/21/25 11:48 am
Jade McCain (jm558v): Approved
for CCC Secretary
- 3. 03/18/25 1:17 pm
Katie Shannon (shannonk):
Approved for
Sciences DSCC Chair
- 4. 03/21/25 2:26 pm
Jade McCain (jm558v): Approved
for Pending CCC
Agenda post

Programs referencing this course

- [BIO SC-BS: Biological Sciences BS](#)
- [CH ENG-BS: Chemical Engineering BS](#)
- [BIOINV-CTU : BioInnovation CTU](#)
- [EV ENG-BS: Environmental Engineering BS](#)

Requested Effective Date: Fall 2025

Department: Biological Sciences (RBIOLSCI)

Discipline: Biological Sciences (BIO SCI)

Course Number: 4329

Title: Molecular Genetics Laboratory

Abbreviated Course Title: Molecular Genetics Lab

Co-Listed Course:

Catalog Description

This course provides experience in the use of a variety of DNA manipulation techniques that are common to molecular studies. These include DNA extraction, restriction mapping, ~~Southern blotting~~, recombinant plasmid construction, DNA sequencing and analysis, and polymerase chain reaction. Students will design and conduct experiments using CRISPR technology.

Prerequisite(s):
Preceded or accompanied by Bio Sci 4323.

Corequisite(s):

Credit Hours	
Credit Hours	
Credit Type	Credit Hours
Laboratory	2
Total:	2

Required for Majors: No

Elective for Majors: Yes

Communication
Intensive

No

Communication
Emphasized

No

Grading Basis

Graded

Repeatable

No

Justification

the course does not include Southern blotting, which is an outdated technique. Instead, students will learn new CRISPR techniques.

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer
Comments

Key: 5617

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 03/07/25 8:32 pm

Viewing: **BUS 5920 : Artificial Intelligence: Law, Governance, and Policy**

Last edit: 03/18/25 9:03 am

Changes proposed by: Cecil Eng Huang Chua (cecq8z)

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. Graduate Council President
- 8. FS Meeting Agenda
- 9. Faculty Senate Chair
- 10. Registrar
- 11. CAT entry
- 12. Peoplesoft

Approval Path

- 1. 03/07/25 9:27 pm
Cassie Elrod (cassa):
Approved for
RBUS&IT Chair
- 2. 03/10/25 8:50 am
Jade McCain (jm558v): Approved
for CCC Secretary
- 3. 03/11/25 4:54 pm
Cecil Eng Huang Chua (cchua):
Approved for Social
Sciences DSCC Chair
- 4. 03/21/25 2:27 pm
Jade McCain (jm558v): Approved
for Pending CCC
Agenda post

PROPOSED: Pre-Law CTU

Programs
referencing this
course

Requested Effective Date	Fall 2025
Department	Business and Information Tech (RBUS&IT)
Discipline	Business (BUS)
Course Number	5920
Title	Artificial Intelligence: Law, Governance, and Policy
Abbreviated Course Title	AI Law Gov Pol
Co-Listed Course	

Catalog Description
An in-depth study into the domestic and international laws that govern and affect development, adoption, and use of artificial intelligence. Topics include assessing various artificial intelligence frameworks, analyzing associated governmental and organizational artificial intelligence policies, evaluating model bias, and establishing and utilizing a governance structure for artificial intelligence.

Prerequisite(s):
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 No

Intensive

Communication No

Emphasized

Grading Basis Graded

Repeatable No

Justification Required for Pre-law CTU. Formerly BUS 5001.003.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer **Jade McCain (jm558v) (03/10/25 8:21 am):** Removed "BUS" from course number, added
Comments punctuation, and changed grading basis to graded. Course was taught in Spring 2025 with 12
students enrolled.

Course Change Request

Date Submitted: 02/19/25 6:33 pm

Viewing: **COMP ENG 3110 : Computer Organization and Design**

Also listed as: **COMP SCI 3803**

Formerly known as: **COMP ENG 3510**

Last approved: 08/06/24 6:03 am

Last edit: 03/18/25 8:56 am

Changes proposed by: R.Joe Stanley (stanleyj)

Programs referencing this course

COMP ENG 3110:
[CP ENG-BS: Computer Engineering BS](#)
[CP ENG-MI: Computer Engineering Minor](#)

Requested Effective Date	Fall 2025		
Department	Electrical & Computer Engr (RELECENG)		
Discipline	Computer Engineering (COMP ENG)		
Course Number	3110		
Title	Computer Organization and Design		
Abbreviated Course Title	Computer Org and Design		
Co-Listed Course	COMP SCI 3803	Department	Computer Science (RCOMPSCI)

Catalog Description
Introduction to basic concepts of computer organization and design: metrics for computer performance, computer arithmetic, Von Neumann architecture, instruction implementation, control unit, pipelining, memory systems hierarchy, cache memories and basic I/O controllers.

Prerequisite(s):
Comp Eng [2210](#). ~~2210; preceded or accompanied by Comp Eng 3150.~~

Corequisite(s):

Credit Hours

Credit Hours

- 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. 02/20/25 10:36 am
Jonathan Kimball (kimballjw):
Approved for RELECENG Chair

2. 02/20/25 12:15 pm
Jade McCain (jm558v): Approved for CCC Secretary

3. 03/11/25 11:22 am
Kelly Liu (liukh):
Approved for Engineering DSCC Chair

4. 03/21/25 2:27 pm
Jade McCain (jm558v): Approved for Pending CCC Agenda post

- History
1. Jun 30, 2014 by
R.Joe Stanley (stanleyj)

2. Apr 30, 2020 by
R.Joe Stanley

Credit Type		Credit Hours
Lecture		3
Total:	3	

(stanleyj)
3. Aug 6, 2024 by Evie
Sherlock (esdk3)

Required for Majors Yes

Elective for Majors No

Communication No
Intensive

Communication No
Emphasized

Grading Basis Graded

Repeatable No

Justification The prerequisite for CpE 3110 is being updated to CpE 2210 with "preceded or accompanied by Comp Eng 3150" removed. The established prerequisites for CpE 3150 (C or better in CpE 2210 and CS 1500 or programming equivalent) and CpE 3110 (CpE 2210) are sufficient for student success in these courses. CpE 3110 emphasizes computer organization, and CpE 3150 emphasizes hardware/software co-design and an overview of embedded systems using a target microcontroller.

The CpE faculty approved this prerequisite change on Feb. 19, 2025

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer
Comments

Course Change Request

Date Submitted: 03/06/25 8:12 pm

Viewing: **ECON 3300 : Introduction to Econometrics**

Last approved: 05/10/23 6:01 am

Last edit: 03/18/25 9:10 am

Changes proposed by: Melody Lo (mlc2d)

Programs	ECON-BA: Economics BA
referencing this	ECON-BS: Economics BS
course	DDA-CTU: Decision Data Analytics - CTU
	Q ECON-MI: Quantitative Economics Minor

Requested Effective Date	Fall 2025
Department	Economics (RECONOMI)
Discipline	Economics (ECON)
Course Number	3300
Title	Introduction to Econometrics
Abbreviated Course Title	Intro Econometrics
Co-Listed Course	

Catalog Description

This course covers applied perspectives on basic concepts of econometrics using regression methods, including simple regression, multiple regression, and generalized least squares. In addition, the course introduces students to the practice of econometric analysis on real-world applications using the programming languages R and STATA.

Prerequisite(s):

Econ 1100 and Econ [1200](#), and ~~1200 and~~, one of the following: Stat ~~1115~~, Stat 3111, Stat 3113, Stat 3115, Stat 3117, or Stat [5346](#), ~~3546~~.

Corequisite(s):

Credit Hours	
Credit Hours	
Credit Type	Credit Hours
Lecture	3
Total:	3

Required for Majors Yes

In Workflow

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

Approval Path

1. 03/06/25 8:15 pm
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
2. 03/10/25 9:15 am
Jade McCain
(jm558v): Approved
for CCC Secretary
3. 03/11/25 4:54 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

History

1. May 10, 2023 by
Michael Davis
(davismc)

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

Justification We need to correct a typo in the list of prerequisites for one of the courses. STAT 3546 has been corrected to STAT 5346.

Additionally, we have removed STAT 1115 as a prerequisite, as its statistical content is insufficient for students to enter ECON 3300.

Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments **Jade McCain (jm558v) (03/10/25 9:14 am):** Added "and one of the following:" to the prerequisite wording to clarify that only one of the Stat courses are required per department confirmation via email on 3/10.
Jade McCain (jm558v) (03/18/25 9:10 am): Selected "Yes" for Communication Emphasized per department request via email on 3/18.

Key: 4942

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 02/14/25 11:11 am

Viewing: **ECON 5338 : Innovation and Value Generation**

Also listed as: **CHEM ENG 5338 / MIN ENG 5338 / NUC ENG 5338**

Last edit: 03/18/25 9:10 am

Changes proposed by: Melody Lo (mlc2d)

Programs
referencing this
course

ECON 5338:
PROPOSED: Economics and Innovation MS
PROPOSED: Value-driven Innovation CT

Requested Effective Date	Fall 2025		
Department	Economics (RECONOMI)		
Discipline	Economics (ECON)		
Course Number	5338		
Title	Innovation and Value Generation		
Abbreviated Course Title	Innovation Value Generation		
Co-Listed Course	CHEM ENG 5338	Department Chemical and Biochemical Engineering (RCHEMENG)	
	MIN ENG 5338	Department Mining and Explosives Engineering (RMINENG)	
	NUC ENG 5338	Department Nuclear Eng & Radiation Sci (RNUCLENG)	

Catalog Description

This course introduces a structured framework for understanding and executing the innovation process, from ideation to implementation. It emphasizes a systematic approach to identifying real-world needs, crafting solutions, and transforming them into impactful outcomes, providing

In Workflow

- 1. RECONOMI Chair
- 2. RCHEMENG Chair
- 3. RMINENG Chair
- 4. NUC ENG Chair
- 5. CCC Secretary
- 6. Engineering DSCC Chair
- 7. Social Sciences DSCC Chair
- 8. Pending CCC Agenda post
- 9. CCC Meeting Agenda
- 10. Campus Curricula Committee Chair
- 11. Graduate Council President
- 12. FS Meeting Agenda
- 13. Faculty Senate Chair
- 14. Registrar
- 15. CAT entry
- 16. Peoplesoft

Approval Path

- 1. 02/14/25 11:13 am
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
- 2. 02/18/25 12:41 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
- 3. 02/18/25 1:03 pm
Kwame Awuah-Offei (kabb3): Approved
for RMINENG Chair
- 4. 02/19/25 10:42 am
Joseph Newkirk (jnewkirk):
Approved for NUC
ENG Chair
- 5. 02/21/25 2:14 pm
Jade McCain (jm558v): Approved

strategies for identifying customer needs and determining innovative solutions.

Prerequisite(s):

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification This course needs to be created for the new approved MS in Economics and Innovation program.

Semesters Previously Offered

Term(s) Offered as experimental

Previous Course Code

Is this a MOTR Course?

Reviewer Comments Jade McCain (jm558v) (02/21/25 2:04 pm): Selected "yes" for Elective for Majors and added Grading Basis.
Jade McCain (jm558v) (03/18/25 9:10 am): Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.

for CCC Secretary
6. 03/11/25 11:32 am
Kelly Liu (liukh):
Approved for
Engineering DSCC
Chair
7. 03/17/25 11:47 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
8. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Course Change Request

Date Submitted: 02/04/25 10:24 am

Viewing: **ECON 5360 : Data Driven Strategic Insights**

Also listed as: **NUC ENG 5360**

Last approved: 05/08/23 6:01 am

Last edit: 03/19/25 8:02 am

Changes proposed by: Melody Lo (mlc2d)

	ECON 5360:
Programs	<u>ECON-BA: Economics BA</u>
referencing this	<u>ECON-BS: Economics BS</u>
course	<u>FETECH-CTU: Financial Economics and Technology - CTU</u>
	<u>DDA-CTU: Decision Data Analytics - CTU</u>
	<u>Q ECON-MI: Quantitative Economics Minor</u>
	<u>PROPOSED: Economics and Innovation MS</u>

Requested Effective Date	Fall 2025	
Department	Economics (RECONOMI)	
Discipline	Economics (ECON)	
Course Number	5360	
Title	Data Driven Strategic Insights	
Abbreviated Course Title	Strategic Insights	
Co-Listed Course	<u>NUC ENG 5360</u>	Department
		<u>Nuclear Eng & Radiation Sci (RNUCLENG)</u>

Catalog Description
This course designates a corporate executive to teach identifying the appropriate data analytics for corporate decision-making using modeling frameworks such as regression analysis, forecasting, Monte Carlo simulation, and optimization. The course utilizes Python and cloud-based software platforms to work with large databases in financial contexts.
Prerequisite(s):
Econ <u>1100</u> , <u>Econ 1200</u> , 1100 and <u>Econ 3300</u> , or instructor approval. Econ 1200 .
Corequisite(s):

Credit Hours

In Workflow
1. RECONOMI Chair
2. NUC ENG Chair
3. CCC Secretary
4. Engineering DSCC Chair
5. Social Sciences DSCC Chair
6. Pending CCC Agenda post
7. CCC Meeting Agenda
8. Campus Curricula Committee Chair
9. Graduate Council President
10. FS Meeting Agenda
11. Faculty Senate Chair
12. Registrar
13. CAT entry
14. Peoplesoft

Approval Path
1. 02/04/25 10:25 am Melody Lo (mlc2d): Approved for RECONOMI Chair
2. 02/07/25 10:07 am Joseph Newkirk (jnewkirk): Approved for NUC ENG Chair
3. 02/21/25 2:15 pm Jade McCain (jm558v): Approved for CCC Secretary
4. 03/11/25 11:32 am Kelly Liu (liukh): Approved for Engineering DSCC Chair
5. 03/11/25 4:58 pm Cecil Eng Huang Chua (cchua): Approved for Social

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification Nuclear and Radiation Science Department has requested to co-list this course.

Sciences DSCC Chair
6. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

History

1. May 8, 2023 by
Michael Davis
(davismc)

Semesters Previously Offered

Term(s) Offered as
experimental

Is this a MOTR
Course?

Reviewer **Jade McCain (jm558v) (03/18/25 9:11 am):** Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.

Jade McCain (jm558v) (03/18/25 3:28 pm): Updated prerequisite language per department request with approval from NUC ENG department, Social Sciences DSCC Chair, and Engineering DSCC Chair via email on 3/18.

Jade McCain (jm558v) (03/19/25 8:02 am): Corrected prerequisite formatting.

Key: 4941

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 02/04/25 9:48 am

Viewing: **ECON 5543 : Innovation Economics and Finance**

Also listed as: **CHEM ENG 5543 / MIN ENG 5543 / NUC ENG 5543**

Last edit: 03/18/25 9:11 am

Changes proposed by: Melody Lo (mlc2d)

In Workflow

- 1. RECONOMI Chair
- 2. RCHEMENG Chair
- 3. RMINENG Chair
- 4. NUC ENG Chair
- 5. CCC Secretary
- 6. Engineering DSCC Chair
- 7. Social Sciences DSCC Chair
- 8. Pending CCC Agenda post
- 9. CCC Meeting Agenda
- 10. Campus Curricula Committee Chair
- 11. Graduate Council President
- 12. FS Meeting Agenda
- 13. Faculty Senate Chair
- 14. Registrar
- 15. CAT entry
- 16. Peoplesoft

Approval Path

- 1. 02/04/25 10:25 am Melody Lo (mlc2d): Approved for RECONOMI Chair
- 2. 02/05/25 1:41 pm Hu Yang (huyang): Approved for RCHEMENG Chair
- 3. 02/05/25 1:43 pm Kwame Awuah-Offei (kabp3): Approved for RMINENG Chair
- 4. 02/07/25 10:07 am Joseph Newkirk (jnewkirk): Approved for NUC ENG Chair
- 5. 02/21/25 2:15 pm Jade McCain (jm558v): Approved

ECON 5543:
PROPOSED: Economics and Innovation MS
PROPOSED: Value-driven Innovation CT
PROPOSED: Energy Economics and Global Sustainability CT

Requested Effective Date	Fall 2025	
Department	Economics (RECONOMI)	
Discipline	Economics (ECON)	
Course Number	5543	
Title	Innovation Economics and Finance	
Abbreviated Course Title	Innovation Econ and Fin	
Co-Listed Course	CHEM ENG 5543	Department Chemical and Biochemical Engineering (RCHEMENG)
	MIN ENG 5543	Department Mining and Explosives Engineering (RMINENG)
	NUC ENG 5543	Department Nuclear Eng & Radiation Sci (RNUCLENG)

Catalog Description
This course teaches rapid project development and financing, from an idea to a revenue-generating asset. It covers process ideation, technology/vendor selection, financial modeling,

contract structuring, non-recourse financing, and project execution, such as engineering, procurement, construction, and start-up, resulting in a cash-flowing, tradeable annuity.

Prerequisite(s):

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification This is a new course for the new MS in Economics and Innovation Program.

Semesters Previously Offered

Term(s) Offered as experimental

Previous Course Code

Is this a MOTR Course?

Reviewer Comments
Jade McCain (jm558v) (02/04/25 3:06 pm): Changed "yes" for elective for majors and added grading basis.
Jade McCain (jm558v) (03/18/25 9:11 am): Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.

for CCC Secretary
6. 03/11/25 11:33 am
Kelly Liu (liukh):
Approved for
Engineering DSCC
Chair
7. 03/17/25 11:47 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
8. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Course Change Request

New Course Proposal

Date Submitted: 02/04/25 11:23 am

Viewing: **ECON 5648 : Innovation to Market**

Also listed as: **CHEM ENG 5648 / MIN ENG 5648 / NUC ENG 5648**

Last edit: 03/18/25 9:11 am

Changes proposed by: Melody Lo (mlc2d)

In Workflow

- 1. RECONOMI Chair
- 2. RCHEMENG Chair
- 3. RMINENG Chair
- 4. NUC ENG Chair
- 5. CCC Secretary
- 6. Engineering DSCC Chair
- 7. Social Sciences DSCC Chair
- 8. Pending CCC Agenda post
- 9. CCC Meeting Agenda
- 10. Campus Curricula Committee Chair
- 11. Graduate Council President
- 12. FS Meeting Agenda
- 13. Faculty Senate Chair
- 14. Registrar
- 15. CAT entry
- 16. Peoplesoft

Approval Path

- 1. 02/04/25 11:33 am Melody Lo (mlc2d): Approved for RECONOMI Chair
- 2. 02/05/25 1:42 pm Hu Yang (huyang): Approved for RCHEMENG Chair
- 3. 02/05/25 1:43 pm Kwame Awuah-Offei (kabb3): Approved for RMINENG Chair
- 4. 02/07/25 10:07 am Joseph Newkirk (jnewkirk): Approved for NUC ENG Chair
- 5. 02/21/25 2:16 pm Jade McCain (jm558v): Approved

ECON 5648 :
PROPOSED: Economics and Innovation MS
PROPOSED: Value-driven Innovation CT

Programs
referencing this
course

Requested Effective Date	Fall 2025
Department	Economics (RECONOMI)
Discipline	Economics (ECON)
Course Number	5648
Title	Innovation to Market
Abbreviated Course Title	Innovation to Market

Co-Listed Course	CHEM ENG 5648	Department
		Chemical and Biochemical Engineering (RCHEMENG)
	MIN ENG 5648	Department
		Mining and Explosives Engineering (RMINENG)
	NUC ENG 5648	Department
		Nuclear Eng & Radiation Sci (RNUCLENG)

Catalog Description

This course provides the tools needed to transform innovative solutions into market-ready products and services, focusing on business model development, value generation, and product management. Students will learn to identify product-market fit, maximize value to customers

and users, and launch successful innovations.

Prerequisite(s):
Econ 5338 and Econ 5543.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification This is a new course for the new MS in Economics and Innovation Program.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer
Comments
Jade McCain (jm558v) (02/04/25 3:07 pm): Changed "yes" for elective for majors and added grading basis.
Jade McCain (jm558v) (03/18/25 9:11 am): Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.

for CCC Secretary
6. 03/11/25 11:33 am
Kelly Liu (liukh):
Approved for
Engineering DSCC
Chair
7. 03/17/25 11:47 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
8. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Course Change Request

New Course Proposal

Date Submitted: 02/04/25 11:17 am

Viewing: **ECON 5658 : Building Sustainability and Environmental, Social and Governance (ESG)**

Also listed as: **CHEM ENG 5658 / MIN ENG 5658 / NUC ENG 5658**

Last edit: 03/18/25 9:12 am

Changes proposed by: Melody Lo (mlc2d)

Programs referencing this course

ECON 5658:
[PROPOSED: Economics and Innovation MS](#)
[PROPOSED: Energy Economics and Global Sustainability CT](#)

Requested Effective Date	Fall 2025	
Department	Economics (RECONOMI)	
Discipline	Economics (ECON)	
Course Number	5658	
Title	Building Sustainability and Environmental, Social and Governance (ESG)	
Abbreviated Course Title	Building Sustainability & ESG	
Co-Listed Course	CHEM ENG 5658	Department Chemical and Biochemical Engineering (RCHEMENG)
	MIN ENG 5658	Department Mining and Explosives Engineering (RMINENG)
	NUC ENG 5658	Department Nuclear Eng & Radiation Sci (RNUCLENG)

Catalog Description

In Workflow

- 1. RECONOMI Chair
- 2. RCHEMENG Chair
- 3. RMINENG Chair
- 4. NUC ENG Chair
- 5. CCC Secretary
- 6. Engineering DSCC Chair
- 7. Social Sciences DSCC Chair
- 8. Pending CCC Agenda post
- 9. CCC Meeting Agenda
- 10. Campus Curricula Committee Chair
- 11. Graduate Council President
- 12. FS Meeting Agenda
- 13. Faculty Senate Chair
- 14. Registrar
- 15. CAT entry
- 16. Peoplesoft

Approval Path

- 1. 02/04/25 11:33 am
Melody Lo (mlc2d):
Approved for RECONOMI Chair
- 2. 02/05/25 1:42 pm
Hu Yang (huyang):
Approved for RCHEMENG Chair
- 3. 02/05/25 1:43 pm
Kwame Awuah-Offei (kabp3): Approved for RMINENG Chair
- 4. 02/07/25 10:08 am
Joseph Newkirk (jnewkirk):
Approved for NUC ENG Chair
- 5. 02/21/25 2:17 pm
Jade McCain (jm558v): Approved

Across the globe, businesses are increasingly recognizing the importance of sustainability and ESG principles. This course equips students with the knowledge, tool set, and skills needed to understand, implement, and integrate sustainability and ESG practices in various organizational contexts.

Prerequisite(s):
Junior or above 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 Yes
Grading Basis Graded
Repeatable No

Justification This is a new course for the new MS in Economics and Innovation Program.

Semesters Previously Offered

Term(s) Offered as experimental
Previous Course Code
Is this a MOTR Course?

Reviewer Comments
Jade McCain (jm558v) (02/04/25 3:08 pm): Changed "yes" for elective for majors and added grading basis.
Jade McCain (jm558v) (03/18/25 9:12 am): Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.

for CCC Secretary
6. 03/11/25 11:34 am
Kelly Liu (liukh):
Approved for
Engineering DSCC
Chair
7. 03/17/25 11:48 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
8. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Course Change Request

New Course Proposal

Date Submitted: 02/04/25 11:28 am

Viewing: **ECON 6020 : Contemporary Issues in Technology and Innovation**

Also listed as: **CHEM ENG 6020 / MIN ENG 6020 / NUC ENG 6020**

Last edit: 03/18/25 9:12 am

Changes proposed by: Melody Lo (mlc2d)

Programs referencing this course

ECON 6020:
[PROPOSED: Economics and Innovation MS](#)
[PROPOSED: Value-driven Innovation CT](#)

Requested Effective Date	Fall 2025	
Department	Economics (RECONOMI)	
Discipline	Economics (ECON)	
Course Number	6020	
Title	Contemporary Issues in Technology and Innovation	
Abbreviated Course Title	CI Technology and Innovation	
Co-Listed Course	CHEM ENG 6020	Department Chemical and Biochemical Engineering (RCHEMENG)
	MIN ENG 6020	Department Mining and Explosives Engineering (RMINENG)
	NUC ENG 6020	Department Nuclear Eng & Radiation Sci (RNUCLENG)

Catalog Description
This course explores contemporary trends, challenges, and opportunities in technology and

In Workflow

1. RECONOMI Chair
2. RCHEMENG Chair
3. RMINENG Chair
4. NUC ENG Chair
5. CCC Secretary
6. Engineering DSCC Chair
7. Social Sciences DSCC Chair
8. Pending CCC Agenda post
9. CCC Meeting Agenda
10. Campus Curricula Committee Chair
11. Graduate Council President
12. FS Meeting Agenda
13. Faculty Senate Chair
14. Registrar
15. CAT entry
16. Peoplesoft

Approval Path

1. 02/04/25 11:33 am
Melody Lo (mlc2d): Approved for RECONOMI Chair
2. 02/05/25 1:42 pm
Hu Yang (huyang): Approved for RCHEMENG Chair
3. 02/05/25 1:46 pm
Kwame Awuah-Offei (kabp3): Approved for RMINENG Chair
4. 02/07/25 10:08 am
Joseph Newkirk (jnewkirk): Approved for NUC ENG Chair
5. 02/21/25 2:17 pm
Jade McCain (jm558v): Approved

innovation, featuring lectures by various industrial experts. Topics include disruptive technologies, innovation strategies, regulatory and policy impacts, and emerging markets. Students will learn the forces driving change in today's global technology landscape.

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 No
Communication Intensive No
Communication Emphasized Yes
Grading Basis Graded
Repeatable No

Justification This is a new course for the new MS in Economics and Innovation Program.

Semesters Previously Offered

Term(s) Offered as experimental
Previous Course Code
Is this a MOTR Course?

Reviewer Comments
Jade McCain (jm558v) (02/04/25 3:08 pm): Changed "no" for elective for majors and added grading basis.
Jade McCain (jm558v) (03/18/25 9:12 am): Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.

for CCC Secretary
6. 03/11/25 11:34 am
Kelly Liu (liukh):
Approved for Engineering DSCC Chair
7. 03/17/25 11:48 am
Cecil Eng Huang Chua (cchua):
Approved for Social Sciences DSCC Chair
8. 03/21/25 2:27 pm
Jade McCain (jm558v): Approved for Pending CCC Agenda post

Course Change Request

New Course Proposal

Date Submitted: 02/04/25 11:33 am

Viewing: **ECON 6030 : Contemporary Issues in Energy Economics**

Also listed as: **MIN ENG 6030 / NUC ENG 6030**

Last edit: 03/18/25 9:12 am

Changes proposed by: Melody Lo (mlc2d)

Programs referencing this course

ECON 6030:
[PROPOSED: Economics and Innovation MS](#)
[PROPOSED: Energy Economics and Global Sustainability CT](#)

Requested Effective Date	Fall 2025	
Department	Economics (RECONOMI)	
Discipline	Economics (ECON)	
Course Number	6030	
Title	Contemporary Issues in Energy Economics	
Abbreviated Course Title	CI in Energy Economics	
Co-Listed Course	MIN ENG 6030	Department
		Mining and Explosives Engineering (RMINENG)
	NUC ENG 6030	Department
		Nuclear Eng & Radiation Sci (RNUCLENG)

Catalog Description

This course explores the key challenges, trends, and opportunities shaping the future of energy, featuring insights from industry experts. It delves into the complexities of energy transition, decarbonization, policy regulation, and technological innovations, highlighting the forces driving change in the global energy economy.

Prerequisite(s):

Graduate standing.

- In Workflow
1. RECONOMI Chair

2. RMINENG Chair

3. NUC ENG Chair

4. CCC Secretary

5. Engineering DSCC Chair

6. Social Sciences DSCC Chair

7. Pending CCC Agenda post

8. CCC Meeting Agenda

9. Campus Curricula Committee Chair

10. Graduate Council President

11. FS Meeting Agenda

12. Faculty Senate Chair

13. Registrar

14. CAT entry

15. Peoplesoft

- Approval Path
1. 02/04/25 11:33 am
Melody Lo (mlc2d):
Approved for
RECONOMI Chair

2. 02/05/25 1:46 pm
Kwame Awuah-Offei (kabb3): Approved
for RMINENG Chair

3. 02/07/25 10:08 am
Joseph Newkirk (jnewkirk):
Approved for NUC
ENG Chair

4. 02/21/25 2:18 pm
Jade McCain (jm558v): Approved
for CCC Secretary

5. 03/11/25 11:35 am
Kelly Liu (liukh):
Approved for
Engineering DSCC

Corequisite(s):

Chair
6. 03/17/25 11:48 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
7. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors No

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification This is a new course for the new MS in Economics and Innovation Program.

Semesters Previously Offered

Term(s) Offered as experimental

Previous Course Code

Is this a MOTR Course?

Reviewer **Jade McCain (jm558v) (02/04/25 3:09 pm):** Added grading basis.
Comments **Jade McCain (jm558v) (03/18/25 9:12 am):** Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.

Course Change Request

New Course Proposal

Date Submitted: 02/04/25 3:44 pm

Viewing: **ECON 6301 : Microeconomics: Managerial and Project Economics**

Also listed as: **NUC ENG 6301**

Last edit: 03/18/25 9:12 am

Changes proposed by: Melody Lo (mlc2d)

Programs referencing this course

ECON 6301:
[PROPOSED: Economics and Innovation MS](#)

Requested Effective Date	Fall 2025		
Department	Economics (RECONOMI)		
Discipline	Economics (ECON)		
Course Number	6301		
Title	Microeconomics: Managerial and Project Economics		
Abbreviated Course Title	Micro: Project Economics		
Co-Listed Course	NUC ENG 6301	Department	
		Nuclear Eng & Radiation Sci (RNUCLENG)	

Catalog Description

This course equips students with microeconomic tools to optimize business outcomes, focusing on pricing strategies and production efficiency across different market structures. Students will learn financial feasibility modeling and incorporate uncertainty to assess the economic viability of engineering and infrastructure projects using key financial metrics.

Prerequisite(s):

Corequisite(s):

Graduate standing.

Credit Hours

In Workflow

1. RECONOMI Chair

2. NUC ENG Chair

3. CCC Secretary

4. Engineering DSCC Chair

5. Social Sciences DSCC Chair

6. Pending CCC Agenda post

7. CCC Meeting Agenda

8. Campus Curricula Committee Chair

9. Graduate Council President

10. FS Meeting Agenda

11. Faculty Senate Chair

12. Registrar

13. CAT entry

14. Peoplesoft

Approval Path

1. 02/04/25 3:44 pm
Melody Lo (mlc2d):
Approved for RECONOMI Chair

2. 02/07/25 10:08 am
Joseph Newkirk (jnewkirk):
Approved for NUC ENG Chair

3. 02/21/25 2:18 pm
Jade McCain (jm558v): Approved for CCC Secretary

4. 03/11/25 11:35 am
Kelly Liu (liukh):
Approved for Engineering DSCC Chair

5. 03/17/25 11:49 am
Cecil Eng Huang Chua (cchua):
Approved for Social

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors No

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification This is a new course for the new MS in Economics and Innovation Program.

Sciences DSCC Chair
6. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer Comments
Jade McCain (jm558v) (02/21/25 2:10 pm): Selected "No" for Elective for Majors and added Grading Basis.
Jade McCain (jm558v) (03/18/25 9:12 am): Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.

Key: 10232

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 02/09/25 10:14 am

Viewing: **ECON 6302 : Macroeconomics: Navigating Risks and Trends**

Last edit: 03/18/25 9:13 am

Changes proposed by: Melody Lo (mlc2d)

In Workflow

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

Approval Path

- 1. 02/09/25 10:17 am
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
- 2. 02/21/25 2:19 pm
Jade McCain
(jm558v): Approved
for CCC Secretary
- 3. 02/21/25 2:55 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
- 4. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

PROPOSED: Economics and Innovation MS

Programs
referencing this
course

Requested Effective Date	Fall 2025
Department	Economics (RECONOMI)
Discipline	Economics (ECON)
Course Number	6302
Title	Macroeconomics: Navigating Risks and Trends
Abbreviated Course Title	Macroeconomics
Co-Listed Course	

Catalog Description
This course explores key macroeconomic forces shaping global markets, including exchange rate volatility, fiscal and monetary policies, geopolitical uncertainty, and trade conflicts. Students will learn to navigate these complexities and interdependencies of global economic forces to improve strategic decision-making toward long-term organizational success.

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	No
Communication Intensive	No
Communication Emphasized	Yes
Grading Basis	Graded
Repeatable	No

Justification	This is a new course for the new MS in Economics and Innovation Program.
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Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer Comments	Jade McCain (jm558v) (02/21/25 2:11 pm): Selected "No" for Required for Majors and added Grading Basis. Jade McCain (jm558v) (03/18/25 9:13 am): Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.
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Key: 10236

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 02/04/25 4:41 pm

Viewing: **ECON 6355 : Econometrics and Forecasting**

Last edit: 03/18/25 9:13 am

Changes proposed by: Melody Lo (mlc2d)

In Workflow

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

Approval Path

- 1. 02/04/25 4:41 pm
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
- 2. 02/21/25 2:20 pm
Jade McCain
(jm558v): Approved
for CCC Secretary
- 3. 02/21/25 2:55 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
- 4. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

PROPOSED: Economics and Innovation MS

Programs
referencing this
course

Requested Effective Date	Fall 2025
Department	Economics (RECONOMI)
Discipline	Economics (ECON)
Course Number	6355
Title	Econometrics and Forecasting
Abbreviated Course Title	Econometrics and Forecasting
Co-Listed Course	

Catalog Description
This course provides an applied perspective on econometric concepts, including causal inference, discrete choice models, and statistical machine learning for forecasting. Additionally, students will be introduced to the practice of econometrics and predictive analytics through real-world applications, using the programming languages R and Stata.

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	No
Communication Intensive	No
Communication Emphasized	Yes
Grading Basis	Graded
Repeatable	No

Justification	This is a new course for the new MS in Economics and Innovation Program.
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Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer Comments	Jade McCain (jm558v) (02/21/25 2:11 pm): Selected "No" for Required for Majors and added Grading Basis. Jade McCain (jm558v) (03/18/25 9:13 am): Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.
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Key: 10234

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 02/04/25 9:36 am

Viewing: **ECON 6638 : Energy Policy and Economic Analysis**

Also listed as: **CHEM ENG 6638 / MIN ENG 6638 / NUC ENG 6638**

Last edit: 03/18/25 9:13 am

Changes proposed by: Melody Lo (mlc2d)

Programs
referencing this
course

ECON 6638:
PROPOSED: Economics and Innovation MS
PROPOSED: Energy Economics and Global Sustainability CT

Requested Effective Date	Fall 2025		
Department	Economics (RECONOMI)		
Discipline	Economics (ECON)		
Course Number	6638		
Title	Energy Policy and Economic Analysis		
Abbreviated Course Title	Energy Policy and Analysis		
Co-Listed Course	CHEM ENG 6638	Department	
		Chemical and Biochemical Engineering (RCHEMENG)	
	MIN ENG 6638	Department	
		Mining and Explosives Engineering (RMINENG)	
	NUC ENG 6638	Department	
		Nuclear Eng & Radiation Sci (RNUCLENG)	

Catalog Description

This course focuses on the economic and policy aspects of energy. Topics include energy prices, electricity market mechanisms, renewables, nuclear, alternative fuels, climate change, and the environmental consequences of energy consumption and production. The efficiency of various

In Workflow

1. RECONOMI Chair
2. RCHEMENG Chair
3. RMINENG Chair
4. NUC ENG Chair
5. CCC Secretary
6. Engineering DSCC Chair
7. Social Sciences DSCC Chair
8. Pending CCC Agenda post
9. CCC Meeting Agenda
10. Campus Curricula Committee Chair
11. Graduate Council President
12. FS Meeting Agenda
13. Faculty Senate Chair
14. Registrar
15. CAT entry
16. Peoplesoft

Approval Path

1. 02/04/25 9:40 am
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
2. 02/05/25 1:42 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
3. 02/05/25 1:46 pm
Kwame Awuah-Offei (kabp3): Approved
for RMINENG Chair
4. 02/07/25 10:08 am
Joseph Newkirk (jnewkirk):
Approved for NUC
ENG Chair
5. 02/21/25 2:22 pm
Jade McCain (jm558v): Approved

energy options is compared and discussed for future energy policies.

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 No

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification This is a new course for the new MS in Economics and Innovation Program.

Semesters Previously Offered

Term(s) Offered as experimental

Previous Course Code

Is this a MOTR Course?

Reviewer Jade McCain (jm558v) (02/04/25 3:12 pm): Added grading basis.

Comments Jade McCain (jm558v) (03/18/25 9:13 am): Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.

- for CCC Secretary
- 6. 03/11/25 11:36 am Kelly Liu (liukh): Approved for Engineering DSCC Chair
- 7. 03/17/25 11:49 am Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
- 8. 03/21/25 2:27 pm Jade McCain (jm558v): Approved for Pending CCC Agenda post

Course Change Request

Date Submitted: 12/19/24 1:49 pm

Viewing: **EDUC 2211 ~~3211~~ : Child Development**

Also listed as: **EDUC ~~3211~~**

Formerly known as: **EDUC 3211**

Last approved: 11/28/22 6:01 am

Last edit: 03/18/25 8:57 am

Changes proposed by: Beth Kania-Gosche (bakm75)

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. 12/19/24 2:23 pm
Beth Kania-Gosche (bakm75):
Approved for REDUCATION Chair
- 2. 12/19/24 4:08 pm
Jade McCain (jm558v): Rollback to REDUCATION Chair for CCC Secretary
- 3. 02/20/25 10:17 am
Beth Kania-Gosche (bakm75):
Approved for REDUCATION Chair
- 4. 02/20/25 11:12 am
Jade McCain (jm558v): Approved for CCC Secretary
- 5. 02/20/25 12:36 pm
Cecil Eng Huang Chua (cchua):
Approved for Social Sciences DSCC Chair
- 6. 03/21/25 2:27 pm
Jade McCain

EDUC 3211:

Programs referencing this course

EDUC-BS: Education BS

EDYC-CTU: Undergraduate Certificate in Education of Young Children CTU

Requested Effective Date: Fall 2025

Department: Education (REDUCATION)

Discipline: Education (EDUC)

Course Number: 2211 ~~3211~~

Title: Child Development

Abbreviated Course Title: Child Development

Co-Listed Course:

Catalog Description

This course explores characteristics of children from birth to age eight, including language acquisition, creative expression, and physical, cognitive, and social-emotional development. The impact of trauma on development will be emphasized. The connection of cultural differences to development will also be discussed.

Prerequisite(s):

Education degree or undergraduate certificate declared. ~~Educ 1040 or Educ 1055 or Psych 1101.~~

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total:	3
Required for Majors	Yes
Elective for Majors	Yes
Communication Intensive	
Communication Emphasized	
Grading Basis	Graded
Repeatable	No

Justification
 This course is offered at many community colleges at the 200 level. As we work to better align our curriculum for transfer, we are cleaning up issues such as this.

(jm558v): Approved for Pending CCC Agenda post

History

1. Jan 18, 2019 by ershenb
2. Feb 13, 2021 by Beth Kania-Gosche (bakm75)
3. Nov 28, 2022 by Beth Kania-Gosche (bakm75)

Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

Reviewer Comments **Jade McCain (jm558v) (12/19/24 4:08 pm):** Rollback: Rollback per needing to be submitted with DC forms.

Course Change Request

New Course Proposal

Date Submitted: 11/20/24 9:40 am

Viewing: **EDUC 3170 : Teaching Reading and Writing in Middle/High School**

Last edit: 02/20/25 11:09 am

Changes proposed by: Beth Kania-Gosche (bakm75)

Catalog Pages referencing this course	Teacher Education and Certification
Programs referencing this course	PHYSIC-BS: Physics BS AP MATH-BS: Applied Mathematics BS BIO SC-BA: Biological Sciences BA BUS&MS-BS: Business and Mgmt Systems BS CHEM-BA: Chemistry BA HIST-BA: History BA PSYCH-BA: Psychological Science BA PSYCH-BS: Psychological Science BS EDUC-BS: Education BS ENV SCI-BS: Environmental Science BS

Requested Effective Date	8/18/2025
Department	Education (REDUCATION)
Discipline	Education (EDUC)
Course Number	3170
Title	Teaching Reading and Writing in Middle/High School
Abbreviated Course Title	Reading & Writing in HS
Co-Listed Course	

Catalog Description	Students will learn research-based literacy and writing strategies for their intended content area. Students will focus on the five pillars of reading instruction, especially vocabulary. Instructional interventions for students with reading deficits will be discussed. Effective instruction for English Language Learners will also be addressed.
Prerequisite(s):	EDUC 3216
Corequisite(s):	

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. 11/20/24 9:56 am
Beth Kania-Gosche (bakm75):
Approved for REDUCATION Chair
2. 11/27/24 1:04 pm
Jade McCain (jm558v): Rollback to REDUCATION Chair for CCC Secretary
3. 12/19/24 2:23 pm
Beth Kania-Gosche (bakm75):
Approved for REDUCATION Chair
4. 12/19/24 4:09 pm
Jade McCain (jm558v): Rollback to REDUCATION Chair for CCC Secretary
5. 02/20/25 10:17 am
Beth Kania-Gosche (bakm75):
Approved for REDUCATION Chair

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors Yes

Elective for Majors No

Communication
Intensive

Communication
Emphasized

Grading Basis Graded

Repeatable No

Justification When education was not a separate department, other department faculty were needed to teach some of the DESE requirements, including this one which is the second, required literacy class. Now, education has the faculty to teach this course.

With the recent state emphasis on teaching the science of reading and English Language Learners, we need a class that reflects those components.

We will submit DCC changes to replace ENGL 3170 with this course in each department.

Semesters Previously Offered

Term(s) Offered as
experimental

Previous Course
Code

Is this a MOTR
Course?

Reviewer **Jade McCain (jm558v) (11/27/24 1:04 pm):** Rollback: Rolled back to be submitted at the same
Comments time as the DC Form.

Jade McCain (jm558v) (12/19/24 4:09 pm): Rollback: Rollback per needing to be submitted
with the Education BS DC form.

6. 02/20/25 11:13 am
Jade McCain
(jm558v): Approved
for CCC Secretary
7. 02/20/25 12:36 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
8. 03/21/25 2:28 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Course Change Request

New Course Proposal

Date Submitted: 02/25/25 2:53 pm

Viewing: **ENV SCI 3213 : One Health Basics**

Also listed as: **BIO SCI 3213**

Last edit: 03/19/25 11:36 am

Changes proposed by: Katie Shannon (shannonk)

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. 02/25/25 2:56 pm
David Duvernell (duverneld):
Approved for
RBIOLSCI Chair
- 2. 03/04/25 8:25 am
Jade McCain (jm558v): Approved
for CCC Secretary
- 3. 03/18/25 1:17 pm
Katie Shannon (shannonk):
Approved for
Sciences DSCC Chair
- 4. 03/21/25 2:28 pm
Jade McCain (jm558v): Approved
for Pending CCC
Agenda post

Requested Effective Date	Fall 2025
Department	Biological Sciences (RBIOLSCI)
Discipline	Environmental Sciences (ENV SCI)
Course Number	3213
Title	One Health Basics
Abbreviated Course Title	One Health
Co-Listed Course	BIO SCI 3213
Department	Biological Sciences (RBIOLSCI)

Catalog Description

One Health is based on the knowledge that the health of people is interlinked with the health of animals and the environment. In this course, we will explore these interconnections and common One Health issues such as illness spillover events, the growing problem of antibiotic resistance, and the impacts that contaminated water have on animals and people.

Prerequisite(s):
Bio Sci 1223

Corequisite(s):

Credit Hours	
Credit Hours	
Credit Type	Credit Hours
Lecture	3
Total:	3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification This course has been taught twice as ENV SCI 3001, in Spring 2024 and Spring 2025

Semesters Previously Offered

Term(s) Offered as experimental

Previous Course Code

Is this a MOTR Course?

Reviewer Comments **Jade McCain (jm558v) (03/04/25 8:25 am):** This course has been taught twice as an experimental course, ENV SCI 3001, in Spring 2024 with 11 students and Spring 2025 with 9 students. The co-list BIO SCI 3213 is also a new course.

Course Change Request

Date Submitted: 03/05/25 1:15 pm

Viewing: **PHYSICS 1145 : College Physics I**

Last approved: 09/11/24 6:03 am

Last edit: 03/11/25 2:00 pm

Changes proposed by: Thomas Vojta (vojtat)

In Workflow

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

Approval Path

- 1. 03/05/25 1:16 pm
Thomas Vojta (vojtat): Approved for RPHYSICS Chair
- 2. 03/10/25 9:04 am
Jade McCain (jm558v): Rollback to RPHYSICS Chair for CCC Secretary
- 3. 03/10/25 10:45 am
Thomas Vojta (vojtat): Approved for RPHYSICS Chair
- 4. 03/11/25 2:01 pm
Jade McCain (jm558v): Approved for CCC Secretary
- 5. 03/21/25 12:12 pm
Katie Shannon (shannonk): Approved for Sciences DSCC Chair
- 6. 03/21/25 2:28 pm
Jade McCain (jm558v): Approved for Pending CCC Agenda post

Programs referencing this course	PRE-MED-MI: Pre-Medicine Minor BIO SC-BA: Biological Sciences BA BIO SC-BS: Biological Sciences BS CHEM-BA: Chemistry BA CHEM-BS: Chemistry BS CMP SC-BS: Computer Science BS EDUC-BS: Education BS MED LAB: Biological Sciences BS with Emphasis area in Medical Laboratory Scientist ENV SCI-BS: Environmental Science BS
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Requested Effective Date	Fall 2025
Department	Physics (RPHYSICS)
Discipline	Physics (PHYSICS)
Course Number	1145
Title	College Physics I
Abbreviated Course Title	College Physics I
Co-Listed Course	

Catalog Description
An introduction to the ideas of physics, including mechanics, heat, and sound.

Prerequisite(s):
A grade ~~Math 1160 and either~~ of "C" ~~Math 1120~~ or better in Math 1120, Math 1140, Math 1208, Math 1210, Math 1211, Math 1212, or Math 1214 or by placement exam. ~~1140.~~

Corequisite(s):

Credit Hours	
Credit Hours	
Credit Type	Credit Hours
Lecture	3

Credit Type		Credit Hours
Laboratory		1

Total:4

Required for MajorsNo

Elective for MajorsYes ~~No~~

Communication IntensiveNo

Communication EmphasizedYes

Grading BasisGraded

RepeatableNo

Justification

The main reason for this change of prerequisites is that Math 1160 is not offered anymore.
For the placement exam, placement value should be set to to placement *higher* than Math 1120.

Is there a way to fast-track this change because almost none of the students have Math 1160?
Otherwise we will need to issue permission numbers for several dozen students.

History

1. Jul 27, 2020 by waddill

2. Sep 11, 2024 by Julie Parker (juliep)

Semesters Previously Offered

Term(s) Offered as experimental

Is this a MOTR Course?

attribute
Physics I (PHYS 150)
Physics I with Lab (PHYS 150L)

Reviewer Comments

Jade McCain (jm558v) (03/10/25 9:04 am): Rollback: Rollback per yes/no needs to be selected on the Communication Intensive and Communication Emphasized boxes. "Yes" needs to be selected for either Required for Majors or Elective for Majors.

Jade McCain (jm558v) (03/11/25 2:00 pm): Selected "Yes" for Communication Emphasized per department request via email on 3/11.

Program Change Request

Date Submitted: 02/18/25 4:07 pm

Viewing: **CHEM-BA : Chemistry BA**

Last approved: 12/20/24 3:04 pm

Last edit: 03/20/25 10:08 am

Changes proposed by: Thomas Schuman (tschuman)

In Workflow

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

Approval Path

- 1. 02/18/25 9:11 pm Chariklia Sotiriou-Leventis (cslevent): Approved for RCHEMIST Chair
- 2. 02/20/25 11:01 am Jade McCain (jm558v): Approved for CCC Secretary
- 3. 03/18/25 1:17 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
- 4. 03/21/25 2:27 pm Jade McCain (jm558v): Approved for Pending CCC Agenda post

History

- 1. Mar 18, 2014 by Lahne Black (lahne)
- 2. Jul 15, 2015 by pantaleoa
- 3. Jun 18, 2018 by Thomas Schuman (tschuman)
- 4. Dec 3, 2019 by

Catalog Pages Using this Program

[Chemistry](#)

Effective Catalog Edition	FS2025-SP2026
Start Term	Fall 2025
Program Type	Bachelor of Arts
Academic Level	Undergraduate
Program Code	CHEM-BA
Department	Chemistry
Discipline	Chemistry
Title	Chemistry BA
CIP Code	40.0501 - Chemistry, General.

Program Requirements and Description

- Thomas Schuman
(tschuman)
5. Mar 3, 2020 by
Thomas Schuman
(tschuman)
6. May 2, 2023 by
Thomas Schuman
(tschuman)
7. Apr 1, 2024 by
Thomas Schuman
(tschuman)
8. Jul 5, 2024 by
Crystal Wilson
(wilsoncry)
9. Dec 20, 2024 by
Jade McCain
(jm558v)

Bachelor of Arts Chemistry

Freshman Year

First Semester	Credits	Second Semester	Credits
<u>CHEM 1100</u>	1	<u>CHEM 1320</u>	3
<u>CHEM 1110</u>	1	<u>CHEM 1510</u>	2
<u>CHEM 1310</u>	4	<u>MATH 1215</u>	4
<u>CHEM 1319</u>	1	<u>HISTORY 1100</u>	3
<u>ENGLISH 1120</u>	3	Humanities Elective	3
<u>MATH 1214</u> or <u>1210</u> and <u>1211</u>	4		
	14		15

Sophomore Year

First Semester	Credits	Second Semester	Credits
<u>CHEM 2210</u>	3	<u>CHEM 2220</u>	3
<u>CHEM 2219</u>	1	<u>CHEM 2229</u>	1
<u>Electives</u>	6	<u>ENGLISH 1160</u> or <u>3560</u>	3
<u>HISTORY 1200</u>	3	<u>Foreign Language Elective</u>	<u>4</u>
<u>Foreign Language Elective</u>	<u>4</u>	Social Science Elective	3
Biological Science Elective	3	<u>Elective</u>	<u>6</u>
		<u>Minor Degree Elective</u>	<u>3</u>
	14		17

Junior Year

First Semester	Credits	Second Semester	Credits
<u>CHEM 2510</u>	4	<u>PHYSICS 2135</u>	4
<u>STAT 3113</u> or <u>3115</u>	3	<u>Chem Electives (see list below)</u>	4
<u>PHYSICS 1135</u>	4	<u>Electives</u>	7
<u>PHYSICS 1145</u> or <u>1135</u>	4	<u>CHEM 2410</u>	3
Foreign Language Elective	4	<u>Chemistry Elective</u>	<u>3</u>

		<u>PHYSICS 2145 or 2135</u>	<u>4</u>
		<u>Humanities Elective</u>	<u>3</u>
		<u>Social Science Elective</u>	<u>3</u>
	15		16
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 2410	3	CHEM 4010	1
<u>CHEM 3419</u>	<u>1</u>	<u>Chemistry Elective</u>	<u>3</u>
<u>CHEM 4010 or 4099</u>	<u>1</u>	Humanities Elective	3
<u>Chemistry Elective</u>	<u>3</u>	Social Sciences Elective	3
Social Electives	6	Electives	7
<u>Humanities Elective (Literature)</u>	<u>3</u>	<u>Minor Degree Electives</u>	<u>6</u>
<u>Social Science Elective</u>	<u>3</u>		
<u>Minor Degree Elective</u>	<u>3</u>		
	14		15

Total Credits: 120

Students must complete a minimum of ~~120~~ 121 credit hours for the Bachelor ~~bachelor~~ of Arts ~~arts~~ in Chemistry degree and comply with the campus B.A. chemistry degree requirements.

~~Students may have to take more than the minimum number of coursework hours to comply with the B.A. requirements due to variations in minor degree and foreign language requirements within an individual's program of study. Elective credits include a required minor in one of the following areas: English, economics, history, philosophy, psychology, sociology, communications, speech, media, political science, music, mathematics, statistics, foreign language, computer science, biology, or art. Elective credits must include an approved campus minor; see See Undergraduate catalog for courses required for specific minors. minor. All chemistry majors are encouraged to conduct do research through CHEM 4099 through CHEM 4099 . A total of 12 credits of a modern foreign language must also be taken as part of the~~
~~electives above. Chemistry Electives Chem Elective must be selected from 3000 one or higher-level courses. more of the following: CHEM 3310, CHEM 3329, CHEM 4099, CHEM 4210, CHEM 4297, CHEM 4310, CHEM 4410, CHEM 4510, CHEM 4610, CHEM 4619, CHEM 4620, CHEM 4630, CHEM 4810, CHEM 4819, CHEM 4850. This program of study allows students to design, in conjunction with their chemistry advisor, a program for many disciplines including pre-law, business, pre-dentistry, pre-veterinary medicine, as well as pre-medicine. An example of such a program is shown for pre-medical studies: A grade of "C" or better is required for each Chemistry course counted towards the degree.~~

BIO SCI 1113	General Biology	3
BIO SCI 1219	General Biology Lab	1
BIO SCI 2213	Cell Biology	3
BIO SCI 2219	Cell Biology Laboratory	1
CHEM 4610	General Biochemistry	3
CHEM 4619	General Biochemistry Laboratory	2

degree.

Bachelor of Arts

Chemistry

Secondary Education Emphasis Area

Freshman Year

First Semester	Credits	Second Semester	Credits
<u>CHEM 1100</u>	<u>1</u>	<u>CHEM 1320</u>	<u>3</u>
<u>EDUC 1040</u>	<u>2</u>	<u>CHEM 1510</u>	<u>2</u>
<u>CHEM 1310</u>	<u>4</u>	<u>MATH 1215</u>	<u>4</u>

<u>CHEM 1319</u>	1	<u>EDUC 1104</u>	1
<u>MATH 1214</u> or <u>1210</u> and <u>1211</u>	4	ENGLISH 1160	3
PSYCH 1101	3	<u>BIO SCI 1113</u>	3
<u>EDUC 1074</u>	<u>3</u>	<u>PSYCH 1101</u>	<u>3</u>
<u>ENGLISH 1120</u>	3		
	16		16
Sophomore Year			
First Semester	Credits	Second Semester	Credits
<u>CHEM 2210</u>	3	<u>CHEM 2220</u>	3
<u>CHEM 2219</u>	1	CHEM 2229	1
<u>EDUC 1164</u>	2	<u>EDUC 3216</u>	3
<u>EDUC 1174</u>	2	<u>PHYSICS 2135</u>	4
<u>PHYSICS 1145</u> or <u>1135</u>	<u>4</u>	SP&MS 1185	3
<u>EDUC 2102</u> or <u>PSYCH 2300</u>	3	STAT 3113	3
<u>ENGLISH 1221</u> or <u>1222</u>	3	<u>ENGLISH 1221</u> or <u>1222</u>	<u>3</u>
PHYSICS 1135	4	<u>HISTORY 1100</u>	<u>3</u>
<u>ENGLISH 1160</u> or <u>3560</u>	<u>3</u>	<u>ECON 1100</u> , or <u>1200</u> , or <u>POL SCI 1200</u>	<u>3</u>
	14		15
Junior Year			
First Semester	Credits	Second Semester	Credits
<u>CHEM 2510</u>	4	<u>CHEM 2410</u>	3
EDUC 3298	1	CHEM 3419	1
ENGLISH 3170	3	<u>EDUC 3298</u>	<u>1</u>
HISTORY 1100	3	<u>PSYCH 4310</u> or <u>EDUC 2310</u>	3
<u>CHEM 4010</u> or <u>4099</u>	<u>1</u>	<u>HISTORY 1200</u>	3
<u>EDUC 1164</u>	<u>2</u>	<u>HISTORY 3530</u> , or <u>PHILOS 4345</u> , or <u>HISTORY 3534</u>	3
<u>BIO SCI 2263</u>	3	<u>ART 1180</u> , or <u>MUSIC 1150</u> , or <u>THEATRE 1190</u>	3
<u>EDUC 3170</u>	<u>3</u>		
<u>PHYSICS 1505</u> or <u>GEOLOGY 1110</u>	3		
	16		16
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 4010	1	<u>EDUC 4298</u>	1
<u>CHEM 4610</u>	3	<u>EDUC 4299</u>	12
CHEM 4619	2		
<u>CHEM 3419</u>	<u>1</u>		
<u>EDUC 3280</u>	3		
<u>EDUC 3340</u>	3		
<u>PSYCH 3310</u>	3		
<u>PHILOS 1105</u>	3		
	16		13

Total Credits: 122

Students must complete a minimum of 122 ~~133~~ credit hours for the Bachelor of Arts in Chemistry degree with a Secondary Education Emphasis Area. The degree program is intended to culminate in a Certification Recommendation for an initial Missouri teaching certification. Students should also consult the Secondary Teacher Education Program section for Teacher Certification requirements through the Education department.

~~Students should also consult the Secondary Teacher Education Program section for Teacher Certification requirements through the Education department. 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>. A Bachelor of Science in Chemistry degree with a Secondary Education Emphasis Area may be obtained by taking an additional 40 credit~~

~~hours of mostly upper level Chemistry courses (see your academic advisor for a schedule of classes or more information).~~ For this Bachelor of Arts degree program, the minor degree and foreign language requirements of the typical program of study are waived and there are other course substitutions in lieu of education coursework and requirements. A total of nine humanities credit hours are required to be selected from [ENGLISH 1221](#) or [ENGLISH 1222](#) ; [PHILOS 1105](#) ; and one of [ART 1180](#) , [MUSIC 1150](#) , or [THEATRE 1190](#) . All chemistry majors are encouraged to conduct research through CHEM 4099. A grade of "C" or better is required for each Chemistry course counted towards the degree.

~~.Four credit hours of Chemistry Elective must be selected from one or more of the following:CHEM 4210 , CHEM 4297 , CHEM 4410 , CHEM 4510 , CHEM 4610 , CHEM 4619 , CHEM 4620 , CHEM 4710 , CHEM 4810 , CHEM 4819 , CHEM 4850 , and/or CHEM 4099.CHEM 4099 may not count for more than 3 credit hours toward the degree.All chemistry majors are encouraged to do research through CHEM 4099.A grade of "C" or better is required for each Chemistry course counted towards the degree.~~

Justification for request Reduction of degree hours to 120 total crhr. With the education emphasis degree, due to overlapping minimum constraints of the BA minima, the Chemistry major, and DESE teaching requirements, a minimum degree size of 122 crhr is achieved. The course changes include addition of an Econ or Polysci to meet BA minima, change to updated education course EDUC 1074 required for teacher certification, and other course deletions or substitutions to reduce total degree hours but provide optimum degree content for secondary education teacher preparation. The redline document with justification showing how the degree meets the BA minima for the BA degree changes is provided as a supporting document.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting Documents [Bachelor of Arts Chemistry sp2025 redline.docx](#)

Reviewer **Jade McCain (jm558v) (03/06/25 2:29 pm):** Changed humanities elective formatting for consistency and removed EDUC 4310 due to the course number changing.

Comments **Jade McCain (jm558v) (03/20/25 10:02 am):** Removed English 3170 and added EDUC 3170 to Secondary Education Emphasis per Education department's request and Chemistry department and DSCC approval via email on 3/20.

Program Change Request

Date Submitted: 03/07/25 9:23 am

Viewing: **DSCMGMT-MI : Digital Supply Chain
Mgt Minor**

Last approved: 07/14/15 3:36 pm

Last edit: 03/21/25 8:19 am

Changes proposed by: Jade McCain (jm558v)

Catalog Pages Using
this Program

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

Effective Catalog Edition	FS2025-SP2026
Start Term	Fall 2025
Program Type	Minor
Academic Level	Undergraduate
Program Code	DSCMGMT-MI
Department	Business and Information Science & Tech
Discipline	Info Science & Technology
Title	

In Workflow

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

Approval Path

1. 10/17/23 11:48 am
Cassie Elrod (cassa): Rollback to Initiator
2. 03/07/25 7:43 am
Cassie Elrod (cassa): Rollback to Initiator
3. 03/07/25 9:29 pm
Cassie Elrod (cassa): Approved for RINFSCTE Chair
4. 03/10/25 8:34 am
Jade McCain (jm558v): Approved for CCC Secretary
5. 03/11/25 4:54 pm
Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
6. 03/21/25 2:27 pm

Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

History

1. Aug 5, 2014 by
pantaleoa
2. Jun 17, 2015 by
pantaleoa
3. Jul 14, 2015 by
pantaleoa

Digital Supply Chain Mgt Minor

CIP Code

Intended Audience

Program-Specific

Program Requirements and Description

Minor in Digital Supply Chain Management

The minor in digital supply chain management requires the following 15 hours of coursework:

Required Course:

<u>ERP 5310</u>	Supply Chain Management Systems in an ERP Environment
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Require ONE of the following courses:

<u>MECH ENG 3653</u>	<u>Manufacturing</u>
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<u>ENG MGT 3310</u>	<u>Operations and Production Management</u>
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<u>BUS 5360</u>	Business Operations
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<u>ENG MGT 5614</u>	<u>Supply Chain Management Systems</u>
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Require ONE of the following courses:

<u>ERP 4610</u>	Customer Relationship Management in ERP Environment
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~~Two courses from the following list: *~~

<u>BUS 5150</u>	<u>Customer Focus and Satisfaction</u>
<u>Require TWO of the following courses:</u>	
<u>ERP 2110</u>	<u>Introduction to Enterprise Resource Planning</u>
<u>ERP 4220</u>	<u>Introduction to Enterprise Decision Dashboard Prototyping</u>
<u>ERP 5410</u>	Use of Business Intelligence
ERP 5110	Enterprise Resource Planning Systems Design and Implementation
<u>ENG MGT 5615</u>	<u>Production Planning And Scheduling</u>
<u>MECH ENG 5656</u>	Design For Manufacture
<u>MECH ENG 5708</u>	Rapid Product Design And Optimization
<u>MECH ENG 5757/</u> <u>ENG MGT 5515</u>	Integrated Product And Process Design
<u>MECH ENG 5763</u>	Computer Aided Design: Theory and Practice
*Non business and information technology students must select ERP 5110%7CCode as one of the two electives.	

Justification for
request

The motivation for the requested changes

- Modernize and improve the curriculum by utilizing new theories and technologies.
- Improve interdisciplinary collaboration

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer
Comments

Cassie Elrod (cassa) (10/17/23 11:48 am): Rollback: Committee/faculty has not approved sunsetting this minor.

Cassie Elrod (cassa) (03/07/25 7:43 am): Rollback: Edits needed

Jade McCain (jm558v) (03/21/25 8:19 am): Corrected department and discipline.

Program Change Request

Date Submitted: 02/20/25 10:16 am

Viewing: **EDUC-BS : Education BS**

Last approved: 02/04/25 11:12 am

Last edit: 03/21/25 7:35 am

Changes proposed by: Beth Kania-Gosche (bakm75)

Catalog Pages Using
this Program
[Education](#)

Effective Catalog Edition	FS2025-SP2026
Start Term	Fall 2025
Program Type	Bachelor of Science
Academic Level	Undergraduate
Program Code	EDUC-BS
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. 02/20/25 10:17 am
Beth Kania-Gosche
(bakm75):
Approved for
REDUCATION Chair
2. 02/20/25 11:13 am
Jade McCain
(jm558v): Approved
for CCC Secretary
3. 02/20/25 12:35 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/21/25 2:28 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

History

1. Jun 10, 2021 by
Beth Kania-Gosche
(bakm75)
2. Aug 3, 2021 by
Crystal Wilson
(wilsoncry)
3. Apr 7, 2022 by Beth
Kania-Gosche
(bakm75)
4. Jun 14, 2022 by
Beth Kania-Gosche
(bakm75)
5. Jun 24, 2022 by
Crystal Wilson
(wilsoncry)
6. Jun 24, 2022 by

- Crystal Wilson
(wilsoncry)
7. May 19, 2023 by
Jennifer Pohlsander
(jpnfd)
8. May 19, 2023 by
Jennifer Pohlsander
(jpnfd)
9. May 19, 2023 by
Jennifer Pohlsander
(jpnfd)
10. Oct 31, 2024 by
Beth Kania-Gosche
(bakm75)
11. Feb 4, 2025 by Beth
Kania-Gosche
(bakm75)

Education BS

CIP Code

Program Requirements and Description

Bachelor of Science in Education

Overview

The Department of Education offers a degree in education with options for emphases in early childhood (birth-grade 3), elementary (grades 1-6), middle school language arts, middle school mathematics, middle school science, or middle school social science. The educational studies emphasis area offers an option for students working in informal contexts outside of public schools.

All students take the core education curriculum; these courses include multiple field experience courses which requires them to observe and teach lessons in schools. The final semester of the program is student teaching when students are immersed full time in a school setting for 16 weeks, except for the educational studies emphasis area.

The Missouri Department of Elementary and Secondary Education approves the curricula of certification programs. Any substitutions for content or education coursework must be approved by the Department of Education. Students intended to earn a teaching certificate must also pass the Missouri Content Assessment and meet the GPA requirements to be eligible for student teaching and certification.

Program Learning Outcomes

The program learning outcomes are the Missouri Teacher Standards. These are the same standards principals use to evaluate practicing teachers in Missouri. These outcomes are assessed throughout the program and in the student teaching experience; students must demonstrate evidence of satisfactory progress on each outcome.

Missouri S&T education program graduates will . . .

1. Create learning experiences that make the central concepts, structures, and tools of inquiry of the discipline(s) of subject matter meaningful and engaging for all students.
2. Provide learning opportunities that are adapted to diverse learners and support the intellectual, social, and personal development of all students.
3. Develop, implement, and evaluate curriculum based upon student, district and state standards
4. Use a variety of instructional strategies and resources to encourage students' critical thinking, problem solving, and performance skills
5. Create a learning environment that encourages active engagement in learning, positive social interaction, and self-motivation.
6. Model effective verbal, nonverbal, and media communication techniques with students, colleagues and families to foster active inquiry, collaboration, and supportive interaction in the classroom.
7. Monitor the performance of each student through formative and summative assessment strategies, and devise instruction to enable students to grow and develop, making adequate academic progress.
8. Continually assess the effects of choices and actions on others and seek out opportunities to grow professionally.
9. Have effective working relationships with students, parents, school colleagues, and community members

Core Curriculum

EDUC 1104	Teacher Field Experience I	1
EDUC 1074	Foundations of Education in a Diverse Society	3
EDUC 1164	Teacher Field Experience II	2
EDUC 2102	Educational Psychology	3
or PSYCH 2300	Educational Psychology	
EDUC 2310	Education Of The Exceptional Child	3
or PSYCH 4310	Psychology Of The Exceptional Child	
EDUC 3216	Instructional Literacy in the Content Area	3
EDUC 3340	Assessment of Student Learning	3

<u>PSYCH 3310</u>	Developmental Psychology	3
<u>EDUC 4298</u>	Student Teaching Seminar	1
<u>EDUC 4299</u>	Student Teaching	12
<u>EDUC 3298</u>	Teacher Field Experience III	1
Total Credits		35

Emphasis Area: Educational Studies

This emphasis is for students who want to work in educational settings outside of K-12 public schools. Potential career settings include nonprofit organizations, state agencies, childcare, museums, youth development, and more. This flexible emphasis area is designed to combine educational theories with applications in informal educational environments and does not result in teacher certification.

Students must complete the general education requirements and the education core curriculum (35 credit hours) with the exception of student teaching, which should be substituted with additional education courses aligned to the student's career goals. Each student will elect sufficient additional courses to complete a minimum of 120 credit hours; these may be in other disciplines. As this degree does not result in certification, students are not required to meet Missouri Department of Elementary and Secondary Education requirements.

Students must complete the following general education requirements. Substitutions are allowable but must be approved by the department chair.

Students must take the following nine hours of coursework:

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

Math and Sciences. Students must take **18 hours of math and science courses**, including at least one in biological science and one in the physical sciences and at least one math course. In addition to these requirements, students may count [STAT 1115](#), up to 3 hours from psychology classes, and up to 3 hours from history of science and technology classes ([HISTORY 2510](#), [HISTORY 3510](#), or [HISTORY 3530](#)), but may not use them to satisfy another requirement.

Humanities. Students must complete **9 hours in humanities** with at least one course from each of the following: literature, philosophy, and fine arts (Art, Music, or Theater Appreciation).

Social Sciences. Students must complete **12 hours in social science courses**. Students must take at least one course in two of these four areas: economics, history, political science, and psychology.

One of the following courses must be taken to satisfy the requirement of the state of Missouri (the "Williams Law"); this course may count toward fulfilling the social sciences requirement.

<u>HISTORY 1200</u>	Modern Western Civilization	3
<u>HISTORY 1300</u>	American History To 1877	3

<u>HISTORY 1310</u>	American History Since 1877	3
<u>POL SCI 1200</u>	American Government	3
Emphasis Area: Early Childhood An early childhood certificate allows students to teach children from birth through third grade in the state of Missouri.		
<u>EDUC 1055</u>	Introduction to Early Childhood Education	3
<u>EDUC 1221</u>	Health, Nutrition, and Safety in Early Childhood Education	3
<u>EDUC 1820</u>	Early Childhood Program Management	3
<u>EDUC 2401</u>	School, Family, and Community Partnerships	3
<u>EDUC 2440</u>	Observation and Assessment of Young Children	3
<u>EDUC 3203</u>	Introduction to STEM Education	3
<u>EDUC 3215</u>	Teaching Reading in Elementary and Early Childhood Settings	3
<u>EDUC 3217</u>	Analysis and Correction of Reading Difficulties	3
<u>EDUC 3218</u>	Language Arts for Elementary and Early Childhood Teachers	3
<u>EDUC 3220</u>	Teaching Science in the Elementary and Early Childhood Classroom	3
<u>EDUC 3221</u>	Methods of Teaching Math	3
<u>EDUC 3430</u>	Diverse Literature for Children	3
<u>EDUC 3530</u>	Teaching Integrated Social Studies and Humanities	3
<u>EDUC 3211</u>	Child Development	3
Total Credits		42
Students must take the following general education courses. Substitutions must be approved by the department chair.		
<u>ENGLISH 1120</u>	Exposition And Argumentation	3
<u>ENGLISH 1160</u>	Writing And Research	3
<u>SP&M S 1185</u>	Principles Of Speech	3
<u>PHILOS 1105</u>	Self and World: Introduction To Philosophy	3
<u>PSYCH 1101</u>	General Psychology	3
<u>MATH 1120</u>	College Algebra	3-5
or <u>MATH 1140</u>	College Algebra	

<u>POL SCI 1200</u>	American Government	3
<u>HISTORY 2110</u>	World Regional Geography	3
<u>HISTORY 1300</u>	American History To 1877	3
or <u>HISTORY 1310</u>	American History Since 1877	
<u>BIO SCI 1113</u>	General Biology	3
<u>BIO SCI 1219</u>	General Biology Lab	1
<u>PHYSICS 1145</u>	College Physics I	3-4
or <u>PHYSICS 1505</u>	Introductory Astronomy	
<u>GEOLOGY 1110</u>	Physical and Environmental Geology	3
or <u>GEOLOGY 1120</u>	Evolution Of The Earth	
<u>CHEM 1100</u>	Introduction To Laboratory Safety & Hazardous Materials	1
Total Credits		38-41

Students must also take a literature course.

Emphasis Area: Elementary

An elementary certificate allows students to teach grades 1-6 in the state of Missouri.

<u>EDUC 3215</u>	Teaching Reading in Elementary and Early Childhood Settings	3
<u>EDUC 3217</u>	Analysis and Correction of Reading Difficulties	3
<u>EDUC 3218</u>	Language Arts for Elementary and Early Childhood Teachers	3
<u>EDUC 3220</u>	Teaching Science in the Elementary and Early Childhood Classroom	3
<u>EDUC 3221</u>	Methods of Teaching Math	3
<u>EDUC 3222</u>	Geometric Concepts for Teachers	3
<u>EDUC 3203</u>	Introduction to STEM Education	3
<u>EDUC 3430</u>	Diverse Literature for Children	3
<u>EDUC 3530</u>	Teaching Integrated Social Studies and Humanities	3
Total Credits		27

Students must take the following general education courses. Substitutions must be approved by the department chair.

<u>ENGLISH 1120</u>	Exposition And Argumentation	3
<u>ENGLISH 1160</u>	Writing And Research	3

<u>SP&M S 1185</u>	Principles Of Speech	3
<u>ART 1180</u>	Art Appreciation	3
or <u>MUSIC 1150</u>	Music Appreciation: Music of Latin America	
or <u>THEATRE 1190</u>	Theatre via Video	
<u>HISTORY 1300</u>	American History To 1877	3
or <u>HISTORY 1310</u>	American History Since 1877	
<u>PHILOS 1105</u>	Self and World: Introduction To Philosophy	3
<u>PSYCH 1101</u>	General Psychology	3
<u>ECON 1100</u>	Principles Of Microeconomics	3
or <u>ECON 1200</u>	Principles Of Macroeconomics	
<u>HISTORY 2110</u>	World Regional Geography	3
<u>POL SCI 1200</u>	American Government	3
<u>HISTORY 1100</u>	Early Western Civilization	3
<u>HISTORY 1200</u>	Modern Western Civilization	3
<u>MATH 1103</u>	Fundamentals Of Algebra	3-5
or <u>MATH 1120</u>	College Algebra	
<u>PHYSICS 1505</u>	Introductory Astronomy	3-4
or <u>PHYSICS 1145</u>	College Physics I	
<u>BIO SCI 1223</u>	Biodiversity	3
<u>BIO SCI 1229</u>	Biodiversity Lab	1
<u>MATH 1140</u>	College Algebra	3
<u>GEOLOGY 1110</u>	Physical and Environmental Geology	3-5
or <u>CHEM 1310</u> & <u>CHEM 1319</u>	General Chemistry I and General Chemistry Laboratory	
Total Credits		52-57

Emphasis Area: Middle School Language Arts

An middle school certificate allows graduates to teach grades 5-9 in the designated subject area.

<u>EDUC 3215</u>	Teaching Reading in Elementary and Early Childhood Settings	3
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<u>EDUC 3280</u>	Instructional Strategies in the Content Area	3
<u>EDUC 3335</u>	Curriculum And Instruction Of The Middle School	3
ENGLISH 3170	Teaching And Supervising Reading and Writing	3
<u>ENGLISH 2171</u>	Fiction Writing	3
or <u>ENGLISH 2172</u>	Creative Nonfiction Writing	
<u>EDUC 3298</u>	<u>Teacher Field Experience III</u>	<u>1</u>
<u>ENGLISH 3302</u>	History And Structure Of The English Language	3
<u>ENGLISH 3303</u>	The Grammatical Structure of English	3
or <u>ENGLISH 3301</u>	A Linguistic Study Of Modern English	
<u>ENGLISH 1170</u>	Creative Writing	3
EDUC 3298	Teacher Field Experience III	1
<u>EDUC 3170</u>	<u>Teaching Reading and Writing in Middle/High School</u>	<u>3</u>
Total Credits		25
Students must also take four literature electives, of which three must be 2000 or 3000 level. Students in this program are eligible for both a literature minor and a creative writing minor.		
Students must take the following general education courses.		
<u>ENGLISH 1120</u>	Exposition And Argumentation	3
<u>ENGLISH 1160</u>	Writing And Research	3
<u>SP&M S 1185</u>	Principles Of Speech	3
<u>ART 1180</u>	Art Appreciation	3
or <u>MUSIC 1150</u>	Music Appreciation: Music of Latin America	
or <u>THEATRE 1190</u>	Theatre via Video	
<u>ENGLISH 1221</u>	American Literature: 1600 To 1865	3
or <u>ENGLISH 1222</u>	American Literature: 1865 To Present	
<u>PHILOS 1105</u>	Self and World: Introduction To Philosophy	3
or <u>PHILOS 1115</u>	Logic and Reasoning: An Introduction	
<u>HISTORY 1100</u>	Early Western Civilization	3
or <u>HISTORY 1200</u>	Modern Western Civilization	
or <u>HISTORY 1300</u>	American History To 1877	

or <u>HISTORY 1310</u>	American History Since 1877	
<u>POL SCI 1200</u>	American Government	3
<u>ECON 1200</u>	Principles Of Macroeconomics	3
or <u>ECON 1100</u>	Principles Of Microeconomics	
<u>MATH 1103</u>	Fundamentals Of Algebra	3
<u>BIO SCI 1113</u>	General Biology	3
<u>BIO SCI 1219</u>	General Biology Lab	1
<u>GEOLOGY 1110</u>	Physical and Environmental Geology	3-4
or <u>GEOLOGY 1120</u>	Evolution Of The Earth	
or <u>PHYSICS 1505</u>	Introductory Astronomy	
or <u>PHYSICS 1605</u>	Environmental Physics I	
or <u>CHEM 1310</u>	General Chemistry I	
<u>IS&T 1551</u>	Implementing Information Systems: User Perspective	3
or <u>COMP SCI 1500</u>	Computational Problem Solving	
Total Credits		40-41

Students must also take an additional humanity elective and three free elective hours.

Emphasis Area: Middle School Mathematics

An middle school certificate allows graduates to teach grades 5-9 in the designated subject area.

ENGLISH 3170	Teaching And Supervising Reading and Writing	3
<u>EDUC 3280</u>	Instructional Strategies in the Content Area	3
<u>EDUC 3170</u>	<u>Teaching Reading and Writing in Middle/High School</u>	<u>3</u>
<u>EDUC 3298</u>	<u>Teacher Field Experience III</u>	<u>1</u>
<u>EDUC 3335</u>	Curriculum And Instruction Of The Middle School	3
EDUC 3298	Teacher Field Experience III	1
<u>EDUC 3203</u>	Introduction to STEM Education	3
<u>EDUC 3222</u>	Geometric Concepts for Teachers	3
<u>MATH 1103</u>	Fundamentals Of Algebra	3
<u>MATH 1120</u>	College Algebra	3-5

or MATH 1140	College Algebra	
MATH 1208	Calculus With Analytic Geometry I	4-5
or MATH 1214	Calculus I	
or MATH 1210	Calculus I-A	
EDUC 3221	Methods of Teaching Math	3
MATH 1215	Calculus II	4-5
or MATH 1221	Calculus With Analytic Geometry II	
or MATH 1211	Calculus I-B	
or MATH 1212	Survey of Calculus	
COMP SCI 1500	Computational Problem Solving	3
or IS&T 1551	Implementing Information Systems: User Perspective	
STAT 1115	Statistics For The Social Sciences I	3
or STAT 3113	Applied Engineering Statistics	
or STAT 3115	Engineering Statistics	
Total Credits		39-43
Students must take the following general education courses.		
ENGLISH 1120	Exposition And Argumentation	3
ENGLISH 1160	Writing And Research	3
SP&M S 1185	Principles Of Speech	3
ART 1180	Art Appreciation	3
or MUSIC 1150	Music Appreciation: Music of Latin America	
or THEATRE 1190	Theatre via Video	
ENGLISH 1221	American Literature: 1600 To 1865	3
or ENGLISH 1222	American Literature: 1865 To Present	
PHILOS 1105	Self and World: Introduction To Philosophy	3
or PHILOS 1115	Logic and Reasoning: An Introduction	
HISTORY 1100	Early Western Civilization	3
or HISTORY 1200	Modern Western Civilization	
or HISTORY 1300	American History To 1877	

or <u>HISTORY 1310</u>	American History Since 1877	
<u>POL SCI 1200</u>	American Government	3
<u>ECON 1200</u>	Principles Of Macroeconomics	3
or <u>ECON 1100</u>	Principles Of Microeconomics	
<u>BIO SCI 1219</u>	General Biology Lab	1
<u>BIO SCI 1113</u>	General Biology	3
<u>GEOLOGY 1110</u>	Physical and Environmental Geology	3
or <u>GEOLOGY 1120</u>	Evolution Of The Earth	
<u>PHYSICS 1505</u>	Introductory Astronomy	3-4
or <u>PHYSICS 1145</u>	College Physics I	
or <u>CHEM 1310</u>	General Chemistry I	
Total Credits		37-38

Emphasis Area: Middle School Science

An middle school certificate allows graduates to teach grades 5-9 in the designated subject area.

ENGLISH 3170	Teaching And Supervising Reading and Writing	3
<u>EDUC 3280</u>	Instructional Strategies in the Content Area	3
<u>EDUC 3170</u>	<u>Teaching Reading and Writing in Middle/High School</u>	<u>3</u>
<u>EDUC 3335</u>	Curriculum And Instruction Of The Middle School	3
<u>EDUC 3203</u>	Introduction to STEM Education	3
<u>EDUC 3220</u>	Teaching Science in the Elementary and Early Childhood Classroom	3
EDUC 3298	Teacher Field Experience III	1
<u>BIO SCI 1113</u>	General Biology	3
or <u>BIO SCI 1213</u>	Principles of Biology	
<u>EDUC 3298</u>	<u>Teacher Field Experience III</u>	<u>1</u>
<u>BIO SCI 1219</u>	General Biology Lab	1
<u>BIO SCI 1173</u>	Introduction to Environmental Sciences	3
<u>PHYSICS 1505</u>	Introductory Astronomy	3-4
or <u>PHYSICS 1145</u>	College Physics I	

<u>GEOLOGY 1110</u>	Physical and Environmental Geology	3
<u>GEOLOGY 1120</u>	Evolution Of The Earth	3
<u>HISTORY 3530</u>	History of Science	3
or <u>PHILOS 4345</u>	Philosophy Of Science	
<u>CHEM 1310</u>	General Chemistry I	4
<u>CHEM 1319</u>	General Chemistry Laboratory	1
<u>BIO SCI 2223</u>	General Genetics	3
Total Credits		43-44
Students must also take the following general education courses.		
<u>ENGLISH 1120</u>	Exposition And Argumentation	3
<u>ENGLISH 1160</u>	Writing And Research	3
<u>SP&M S 1185</u>	Principles Of Speech	3
<u>ART 1180</u>	Art Appreciation	3
or <u>MUSIC 1150</u>	Music Appreciation: Music of Latin America	
or <u>THEATRE 1190</u>	Theatre via Video	
<u>ENGLISH 1221</u>	American Literature: 1600 To 1865	3
or <u>ENGLISH 1222</u>	American Literature: 1865 To Present	
<u>PHILOS 1105</u>	Self and World: Introduction To Philosophy	3
or <u>PHILOS 1115</u>	Logic and Reasoning: An Introduction	
<u>HISTORY 1100</u>	Early Western Civilization	3
or <u>HISTORY 1200</u>	Modern Western Civilization	
or <u>HISTORY 1300</u>	American History To 1877	
or <u>HISTORY 1310</u>	American History Since 1877	
<u>POL SCI 1200</u>	American Government	3
<u>ECON 1200</u>	Principles Of Macroeconomics	3
or <u>ECON 1100</u>	Principles Of Microeconomics	
<u>MATH 1103</u>	Fundamentals Of Algebra	3-5
or <u>MATH 1120</u>	College Algebra	
or <u>MATH 1140</u>	College Algebra	

<u>STAT 1115</u>	Statistics For The Social Sciences I	3
or <u>STAT 3113</u>	Applied Engineering Statistics	
or <u>STAT 3115</u>	Engineering Statistics	
Total Credits		33-35
Students will also take three hours of humanities elective and three hours of free electives.		
Emphasis Area: Middle School Social Science		
An middle school certificate allows graduates to teach grades 5-9 in the designated subject area.		
ENGLISH 3170	Teaching And Supervising Reading and Writing	3
<u>EDUC 3280</u>	Instructional Strategies in the Content Area	3
<u>EDUC 3170</u>	<u>Teaching Reading and Writing in Middle/High School</u>	<u>3</u>
<u>EDUC 3335</u>	Curriculum And Instruction Of The Middle School	3
<u>EDUC 3530</u>	Teaching Integrated Social Studies and Humanities	3
<u>EDUC 3350</u>	Social Studies In The Elementary School	3
EDUC 3298	Teacher Field Experience III	1
<u>HISTORY 1100</u>	Early Western Civilization	3
or <u>HISTORY 1200</u>	Modern Western Civilization	
<u>EDUC 3298</u>	<u>Teacher Field Experience III</u>	<u>1</u>
<u>HISTORY 1300</u>	American History To 1877	3
or <u>HISTORY 1310</u>	American History Since 1877	
<u>PSYCH 4600</u>	Social Psychology	3
Total Credits		25
Students will also take a DESE-approved American history elective, two DESE-approved world history electives, and one history elective. Students in this program may be eligible for both a history minor and a psychology minor.		
<u>ENGLISH 1120</u>	Exposition And Argumentation	3
<u>ENGLISH 1160</u>	Writing And Research	3
<u>SP&M S 1185</u>	Principles Of Speech	3
<u>ART 1180</u>	Art Appreciation	3
or <u>MUSIC 1150</u>	Music Appreciation: Music of Latin America	

or <u>THEATRE 1190</u>	Theatre via Video	
<u>ENGLISH 1221</u>	American Literature: 1600 To 1865	3
or <u>ENGLISH 1222</u>	American Literature: 1865 To Present	
<u>PHILOS 1105</u>	Self and World: Introduction To Philosophy	3
or <u>PHILOS 1115</u>	Logic and Reasoning: An Introduction	
<u>HISTORY 1100</u>	Early Western Civilization	3
or <u>HISTORY 1200</u>	Modern Western Civilization	
or <u>HISTORY 1300</u>	American History To 1877	
or <u>HISTORY 1310</u>	American History Since 1877	
<u>POL SCI 1200</u>	American Government	3
<u>ECON 1200</u>	Principles Of Macroeconomics	3
or <u>ECON 1100</u>	Principles Of Microeconomics	
<u>MATH 1103</u>	Fundamentals Of Algebra	3-5
or <u>MATH 1120</u>	College Algebra	
or <u>MATH 1140</u>	College Algebra	
<u>BIO SCI 1113</u>	General Biology	3
<u>BIO SCI 1219</u>	General Biology Lab	1
<u>GEOLOGY 1110</u>	Physical and Environmental Geology	3-4
or <u>GEOLOGY 1120</u>	Evolution Of The Earth	
or <u>PHYSICS 1505</u>	Introductory Astronomy	
or <u>PHYSICS 1605</u>	Environmental Physics I	
or <u>CHEM 1310</u>	General Chemistry I	
<u>IS&T 1551</u>	Implementing Information Systems: User Perspective	3
or <u>COMP SCI 1500</u>	Computational Problem Solving	
Total Credits		40-43
Students will also take three hours of humanities elective and three hours of free electives.		

Justification for
request

ENGL 3170 was taught out of the English and Technical Communications department when

Education was not a separate department and had only two faculty. This class has consistently been taught by education faculty, but it creates issues when we have to work through another department for scheduling, textbooks, etc. The education prefix is a more accurate representation of the department teaching and using the class for degree requirements.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Crystal Wilson (wilsoncry) (03/21/25 7:18 am): Updated credit hour range for 'or' classes where the 'or' classes were not all the same credit hours.

Program Change Request

Date Submitted: 03/07/25 9:24 am

Viewing: **ERP-MI : Enterprise Resource Plan**
Minor

Last approved: 04/28/14 10:49 am

Last edit: 03/21/25 8:53 am

Changes proposed by: Jade McCain (jm558v)

Catalog Pages Using
this Program

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

Effective Catalog Edition	FS2025-SP2026
Start Term	Fall 2025
Program Type	Minor
Academic Level	Undergraduate
Program Code	ERP-MI
Department	Business and Information Science & Tech
Discipline	Info Science & Technology
Title	

In Workflow

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

Approval Path

1. 03/07/25 7:43 am
Cassie Elrod (cassa): Rollback to Initiator
2. 03/07/25 9:29 pm
Cassie Elrod (cassa): Approved for RINFSCTE Chair
3. 03/10/25 8:52 am
Jade McCain (jm558v): Approved for CCC Secretary
4. 03/11/25 5:05 pm
Cecil Eng Huang Chua (cchua): Approved for Social Sciences DSCC Chair
5. 03/21/25 2:28 pm
Jade McCain (jm558v): Approved for Pending CCC

History

1. Apr 28, 2014 by
barryf

Enterprise Resource Plan Minor

CIP Code

Program Requirements and Description

Minor in Enterprise Resource Planning (ERP)

The minor in ERP requires the following 15 credit hours of coursework:

Required Course: 3

ERP 2110 Introduction to Enterprise Resource Planning

Require ONE of the following courses: 3

BUS 1210 Financial Accounting

ENG MGT 2211 Engineering Accounting and Finance

Require ONE or MORE of the following courses: 3-6

ERP 4120 Introduction to Enterprise Resource Planning (ERP) Software Development

ERP 5110 Enterprise Resource Planning Systems Design and Implementation

~~Six credit hours of electives from any other ERP designated courses at the 4000 level or above~~ 6

Remainder of 15 credits must be from any ERP 3XXX, ERP4XXX, ERP5XXX, or IST 4444 3-6

Total Credits 12-18

Justification for
request

The motivation for the requested changes

- Modernize and improve the curriculum by utilizing new theories and technologies.
- Improve interdisciplinary collaboration

Attach Budget

System Approval

Letter

MDHE Approval

Supporting

Documents

Reviewer

Comments

Cassie Elrod (cassa) (03/07/25 7:43 am): Rollback: Edits needed

Jade McCain (jm558v) (03/21/25 8:53 am): Corrected department and discipline.

Program Change Request

Date Submitted: 03/03/25 4:13 pm

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

Last approved: 10/25/24 3:24 pm

Last edit: 03/19/25 9:57 am

Changes proposed by: Katie Shannon (shannonk)

Catalog Pages Using
this Program
[Biological Sciences](#)

Final Catalog
Rationale for
Supporting

Effective Catalog Edition	FS2025-SP2026
Start Term	Fall 2025
Program Type	Bachelor of Science
CIM Prospectus	
Academic Level	Undergraduate
Program Code	MED LAB
Department	Biological Sciences
Discipline	Biological Sciences
Offered by	
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. 02/20/25 1:06 pm
David Duvernell (duvernell): Approved for RBIOLSCI Chair
2. 02/20/25 2:45 pm
Jade McCain (jm558v): Approved for CCC Secretary
3. 03/03/25 1:25 pm
Crystal Wilson (wilsoncry): Rollback to RBIOLSCI Chair for Sciences DSCC Chair
4. 03/03/25 1:29 pm
David Duvernell (duvernell): Rollback to Initiator
5. 03/03/25 2:18 pm
David Duvernell

(duvernell):

Rollback to Initiator

6. 03/03/25 2:21 pm

David Duvernell

(duvernell):

Rollback to Initiator

7. 03/03/25 4:17 pm

David Duvernell

(duvernell):

Approved for

RBIOLSCI Chair

8. 03/04/25 8:26 am

Jade McCain

(jm558v): Approved

for CCC Secretary

9. 03/18/25 1:17 pm

Katie Shannon

(shannonk):

Approved for

Sciences DSCC Chair

10. 03/21/25 2:28 pm

Jade McCain

(jm558v): Approved

for Pending CCC

Agenda post

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)

Biological Sciences BS with Emphasis area in Medical Laboratory Scientist

CIP Code

Purpose

Intended Audience

Program-Specific

Admission

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.

Required biological sciences courses:

<u>BIO SCI 1201</u>	Biological Sciences Freshman 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

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>	<u>Introductory Immunology for Medical Laboratory Science</u>	<u>3</u>
<u>BIO SCI 1212</u>	<u>Orientation to Medical Laboratory Science</u>	<u>1</u>
<u>BIO SCI 5313</u>	Pathogenic Microbiology	3
<u>BIO SCI 5393</u>	<u>Immunology</u>	<u>3</u>
<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
CHEM 1301 & CHEM 1319	'Fundamentals of General Chemistry' and General Chemistry Laboratory	4
<u>CHEM 1310 & CHEM 1319</u>	<u>General Chemistry I and General Chemistry Laboratory</u>	5
<u>CHEM 1320</u>	General Chemistry II	3
<u>CHEM 2210 & CHEM 2219</u>	Organic Chemistry I and Organic Chemistry I Lab	4
<u>CHEM 2220 & CHEM 2229</u>	Organic Chemistry II and Organic Chemistry II Lab	4
<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 HISTORY 1300	American History To 1877
or HISTORY 1310	American History Since 1877
or POL SCI 1200	American Government

Justification for
request

Removing BIO SCI 5393 and adding BIO SCI 3393 and BIO SCI 1212 as suggested electives

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer

Comments

Crystal Wilson (wilsoncry) (03/03/25 1:25 pm): Rollback: Rollback for the department to look at CHEM 1301 requirement on form.

David Duvernell (duvernell) (03/03/25 1:29 pm): Rollback: Hi Katie, there is a problem with the chem requirement in this course leaf change, and it is nothing we did this time. In the original creation of this emphasis area chem 1310 somehow got transposed into chem 1301. It needs to be changed to 1310. Can you please make this correction and resubmit? Thanks Dave

David Duvernell (duvernell) (03/03/25 2:18 pm): Rollback: For some reason Chem 1319 got struck. It needs to include chem 1310 and chem 1319.

David Duvernell (duvernell) (03/03/25 2:21 pm): Rollback: It has CHEM 1310 listed as 4 hours, but it is only 3 hrs.

Jade McCain (jm558v) (03/04/25 9:19 am): Changed formatting of CHEM 1310 and CHEM 1319 per department request via email on 3/4.

Program Change Request

New Program Proposal

Date Submitted: 02/15/25 2:56 pm

Viewing: **PROPOSED : Economics and Innovation MS**

Last edit: 02/24/25 1:23 pm

Changes proposed by: Melody Lo (mlc2d)

Effective Catalog Edition	FS2025-SP2026
Start Term	Fall 2025
Program Type	Master of Science
Academic Level	Graduate
Program Code	PROPOSED
Department	Economics
Discipline	Economics
Title	

In Workflow

1. RECONOMI Chair
2. CCC Secretary
3. Social Sciences DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. Graduate Council President
8. FS Meeting Agenda
9. Faculty Senate Chair
10. ProvostOffice
11. Registrar

Approval Path

1. 02/15/25 2:56 pm
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
2. 02/21/25 2:12 pm
Jade McCain
(jm558v): Approved
for CCC Secretary
3. 02/21/25 2:55 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/14/25 2:54 pm
Jade McCain
(jm558v): Rollback
to Social Sciences

DSCC Chair for
Pending CCC
Agenda post
5. 03/17/25 11:48 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
6. 03/21/25 2:28 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Economics and Innovation MS

CIP Code 45.0603 - Econometrics and Quantitative
Economics.

Program Requirements and Description

Master of Science

Economics and Innovation

Today's global market believes that innovations are more sustainable and transformative in solving real-world challenges when innovators look beyond the technical engineering aspects. The Master of Science in Economics and Innovation (MEI) program is designed to complement those with engineering backgrounds and welcomes all qualified STEM students. This program features a core curriculum emphasizing industry-driven skills integrated with essential economics knowledge to navigate the complex investment decision-making process in technologies and innovation, often amid uncertain economic, policy, and regulatory environments. Students can choose from two distinct focus areas:

Value-Driven Innovation - Masters a continuous process of creating products and solutions that deliver unique value through building collaborative ecosystems.

Energy Economics and Global Sustainability - Addresses global challenges at the intersection of energy systems, economic policies, and environmental sustainability.

Because the curriculum for the two focus areas is also approved as graduate certificates, MEI students who complete the corresponding focus area will fulfill the requirements for a graduate certificate and receive **both a master's degree and a graduate certificate**.

Program Requirements:

The Master of Science in Economics and Innovation (non-thesis) degree requires students to complete a total of 10 graduate courses (or 30 credit hours). Of these 10 courses, 6 are required program core courses, and 4 are area core courses designated for a focus area of the student's choice. For clarity, the course tables below outline the curriculum structure and course requirements for students in the MEI program.

Curriculum Structure and Course Requirements

The MEI Program Core Courses

There are a total of six (6) program core courses. Four (4) core courses cover core knowledge in Economics, while two (2) cover core knowledge in Engineering Management.

Program Core Courses

ECON 5360	Data Driven Strategic Insights	3
ECON 6301	Microeconomics: Managerial and Project Economics	3
ECON 6302	Macroeconomics: Navigating Risks and Trends	3
ECON 6355	Econometrics and Forecasting	3
ENG MGT 5320	Project Management	3
ENG MGT 5515	Integrated Product And Process Design	3

Required Area Courses

For each focus area (certificate), there are four (4) required courses.

Value-driven Innovation Focus Area

ECON 5338	Innovation and Value Generation	3
ECON 5543	Innovation Economics and Finance	3
ECON 5648	Innovation to Market	3
ECON 6020	Contemporary Issues in Technology and Innovation	3

Energy Economics and Global Sustainability Focus Area

ECON 5543	Innovation Economics and Finance	3
ECON 5658	Building Sustainability and Environmental, Social and Governance (ESG)	3
ECON 6030	Contemporary Issues in Energy Economics	3
ECON 6638	Energy Policy and Economic Analysis	3

Justification for
request

The MS in Economics and Innovation program has been approved by the MDHE. As a result, we are in Step 21 of the Approval Process for New Degree Programs. This requires us to create the

program (via the DC form) and develop associated new program courses (via the CC form) to seek internal approval from S&T's CCC and Faculty Senate.

Attach Budget	<u>MEI Pro Forma.pdf</u>
System Approval Letter	<u>New Degree Program Proposals (Nov-20-2024).pdf</u>
MDHE Approval	<u>MDHE Approval Letter_ST_December 2024.pdf</u>
Supporting Documents	<u>Full New Degree Proposal S&T's MEI (9-4-2024).pdf</u>

Reviewer
Comments

Jade McCain (jm558v) (02/24/25 8:11 am): Added "MS" to the title for consistency.
Jade McCain (jm558v) (02/24/25 1:23 pm): Added "PROPOSED" to program code.
Jade McCain (jm558v) (03/14/25 2:54 pm): Rollback: Rollback per department request.

Program Change Request

New Program Proposal

Date Submitted: 02/15/25 2:12 pm

Viewing: **PROPOSED : Energy Economics and Global Sustainability CT**

Last edit: 02/24/25 1:24 pm

Changes proposed by: Melody Lo (mlc2d)

Effective Catalog Edition	FS2025-SP2026
Start Term	Fall 2025
Program Type	Certificate
CIM Prospectus	
Academic Level	Graduate
Program Code	PROPOSED
Department	Economics
Discipline	Economics
Offered by	
Title	

In Workflow

1. RECONOMI Chair
2. CCC Secretary
3. Social Sciences DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. Graduate Council President
8. FS Meeting Agenda
9. Faculty Senate Chair
10. ProvostOffice
11. Registrar

Approval Path

1. 02/15/25 2:12 pm
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
2. 02/21/25 2:12 pm
Jade McCain
(jm558v): Approved
for CCC Secretary
3. 02/21/25 2:55 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
4. 03/14/25 2:54 pm
Jade McCain
(jm558v): Rollback
to Social Sciences

DSCC Chair for
Pending CCC
Agenda post
5. 03/17/25 11:47 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
6. 03/21/25 2:28 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Energy Economics and Global Sustainability CT

CIP Code 450699 - 450699

Purpose

Intended Audience

Distance (online) Students
Main Campus Students

Program-Specific Admission

The certificate programs are open to all persons holding a B.S., M.S., or Ph.D. degree in Engineering, Science, and/or Mathematics or is currently accepted into a graduate degree program at Missouri S&T. Once admitted to the program, the student must take the four designated courses (provided in the curriculum section below). To receive a Graduate Certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given three years to complete the program.

Program Requirements and Description

Energy Economics and Global Sustainability Certificate

This industry-focused certificate program in Energy Economics and Global Sustainability navigates global challenges at the intersection of energy technology systems, economic policies, and environmental sustainability. It equips students with the knowledge to drive innovative solutions, shape energy policies, and lead sustainability efforts to address today's pressing energy challenges through collaboration among engineers, economists, and

energy industry experts.

Admission:

This certificate program is open to individuals holding a B.S., M.S., or Ph.D. degree in Engineering, Science, and/or Mathematics, or those who are currently accepted into a graduate degree program at Missouri S&T. Upon admission to the program, students must complete the four designated certificate courses (outlined in the required courses section below). To earn the Graduate Certificate, students must maintain an average cumulative grade point of 3.0 or higher in the certificate courses. After admission, students will have three years to complete the program.

Gateway for Admission to Master's Degree:

Students admitted to the certificate program will have non-degree graduate status; however, they will earn graduate credit for the courses they complete. If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to the M.S. degree program in Economics and Innovation. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degrees.

Required Courses:

ECON 5543	Innovation Economics and Finance	3
ECON 5658	Building Sustainability and Environmental, Social and Governance (ESG)	3
ECON 6030	Contemporary Issues in Energy Economics	3
ECON 6638	Energy Policy and Economic Analysis	3

Justification for
request

The Energy Economics and Global Sustainability Certificate program has been approved by the MDHE. As a result, we are in Step 21 of the Approval Process for New Programs. This requires us to create the program (via the DC form) and develop associated new program courses (via the CC form) to seek internal approval from S&T's CCC and Faculty Senate.

Attach Budget	MEI Pro Forma.pdf
System Approval Letter	GRADUATE CERTIFICATE (DISTANCE EDUCATION) PROGRAM IN - New Grad Certificate Proposal in Energy Economics and Global Sustainability (003).pdf
MDHE Approval	MDHE Approval Letter_ST_December 2024.pdf
Supporting Documents	New Grad Certificate Proposal in Energy Economics and Global Sustainability.pdf

Reviewer
Comments

Jade McCain (jm558v) (02/21/25 1:39 pm): Attached corrected system approval documents.

Jade McCain (jm558v) (02/24/25 8:09 am): Added "CT" to the title for consistency.

Jade McCain (jm558v) (02/24/25 1:24 pm): Added "PROPOSED" to program code.

Jade McCain (jm558v) (03/14/25 2:54 pm): Rollback: Rollback per department request.

Program Change Request

New Program Proposal

Date Submitted: 02/21/25 1:23 pm

Viewing: **PROPOSED : Pre-Law CTU**

Last edit: 03/10/25 8:24 am

Changes proposed by: Shannon Fogg (sfogg)

Effective Catalog Edition	FS2025-SP2026
Start Term	Fall 2025
Program Type	Certificate
CIM Prospectus	
Academic Level	Undergraduate
Program Code	PROPOSED
Department	History & Political Science
Discipline	History
Offered by	Other department(s) offering the certificate. History and Political Science
Title	

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. ProvostOffice
10. Registrar

Approval Path

1. 02/20/25 11:51 am
Shannon Fogg (sfogg): Approved for RHISTORY Chair
2. 02/21/25 11:52 am
Jade McCain (jm558v): Rollback to Initiator
3. 02/21/25 1:25 pm
Shannon Fogg (sfogg): Approved for RHISTORY Chair
4. 02/27/25 10:40 am
Jade McCain (jm558v): Approved for CCC Secretary
5. 02/27/25 11:09 am
Petra Dewitt (dewittp): Approved

for Arts &
Humanities DSCC
Chair
6. 03/21/25 2:28 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Pre-Law CTU

CIP Code 22.0001 - Pre-Law Studies.

Purpose

To provide a framework for students to demonstrate that they have pursued a course of study containing the analytical and thinking skills necessary for a successful career in law school. The program does not emphasize the teaching of law, as law schools teach law from a different perspective, but rather it offers the skill set needed in law school.

Intended Audience

Main Campus Students

Program-Specific

Admission

To be admitted to S&T's undergraduate certificate program in Pre-Law, a student must meet Missouri S&T regular undergraduate admission requirements.

Program Requirements and Description

In order to receive an undergraduate certificate, the student must have an average cumulative grade point of 2.0 or better in the certificate courses. The certificate credits taken by the students will count towards their bachelor's degree. Students must take 12 hours including one required course (3 hours) and 3 additional upper-level courses (9 hours). Courses must come from at least two different disciplines.

Required:

<u>PHILOS 1115</u>	Logic and Reasoning: An Introduction	3
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Must Complete 9 hours from the following:

<u>HISTORY 2510</u>	History of Technology	3
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<u>HISTORY 2791</u>	Historical Research Methods	3
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<u>HISTORY 3125</u>	Ancient Rome	3
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<u>HISTORY 3135</u>	Medieval History II	3
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<u>HISTORY 3140</u>	History Of Renaissance Thought	3
<u>HISTORY 3320</u>	Colonial America	3
<u>HISTORY 3325</u>	Revolutionary America, 1754-1789	3
<u>HISTORY 3340</u>	Age Of Jefferson And Jackson	3
<u>HISTORY 3360</u>	Recent United States History	3
<u>HISTORY 3530</u>	History of Science	3
<u>HISTORY 3534</u>	History of Medieval and Early Modern Science	3
<u>HISTORY 3760</u>	The American Presidency	3
<u>HISTORY 3762</u>	American Foreign Policy Since 1945	3
<u>HISTORY 4145</u>	The Reformation	3
<u>HISTORY 4470</u>	American Environmental History	3
<u>HISTORY 4550</u>	Architecture, Technology and Society; 1750 to Present	3
<u>HISTORY 4790</u>	Historiography	3
<u>PHILOS 3223</u>	Bioethics	3
<u>PHILOS 3225</u>	Engineering Ethics	3
<u>PHILOS 3235</u>	Business Ethics	3
<u>PHILOS 3254</u>	Symbolic Logic in Argumentation	3
<u>PHILOS 4320</u>	Minds And Machines	3
<u>PHILOS 4325</u>	Who Knows What? Knowledge, Truth, and Justification	3
<u>PHILOS 4350</u>	Environmental Ethics and Justice	3
<u>PHILOS 4554</u>	Technology, Energy, and Ethics	3
<u>PHILOS 4665</u>	Creating Future Cities	3
<u>POL SCI 3210</u>	Constitutional Law: Government Powers and Civil Liberties	3
<u>POL SCI 3211</u>	American Political Parties	3
<u>POL SCI 3300</u>	Principles Of Public Policy	3
<u>POL SCI 3760</u>	The American Presidency	3
<u>POL SCI 3762</u>	American Foreign Policy Since 1945	3
<u>POL SCI 4320</u>	The Politics of Innovation	3

<u>POL SCI 4500</u>	Geopolitics and International Security	3
<u>BUS 2910</u>	Business Law	3
<u>BUS 5111</u>	Business Negotiations	3
<u>BUS 5910</u>	Privacy and Information Security	3
<u>BUS 5920</u>	Artificial Intelligence: Law, Governance, and Policy	3
<u>CIV ENG 5640</u>	Environmental Law And Regulations	3
or <u>ENV ENG 5640</u>	Environmental Law And Regulations	
<u>PSYCH 4995</u>	Rationality	3
<u>ENGLISH 3304</u>	Language in Society	3
<u>TCH COM 4550</u>	Proposal Writing	3

Justification for
request

Transition the pre-law minor into a pre-law undergraduate certificate. Makes the study of pre-law more visible to law schools and helps students track the requirements. The certificate in Pre-Law is designed to provide an interdisciplinary program emphasizing the development of analytical, thinking, reasoning, writing and oral communication skills. Using material from the disciplines of history, philosophy, political science as well courses throughout the university, the program delves into issues related to the constitutional development of the state, science, technology, and public policy.

Attach Budget

System Approval Letter [Pre-Law CTU Provost Approval Email.pdf](#)

MDHE Approval

Supporting Documents [PreLaw Proposal final draft.doc](#)
[Pre-Law Cover letter addendum signed.docx](#)
[Pre-Law Cover letter signed depts.docx](#)
[Program Change \(PC\) Form PreLaw CertificateUG.docx](#)

Reviewer

Comments

Jade McCain (jm558v) (02/21/25 11:52 am): Rollback: Rollback per needing Provost Office Approval Memo.

Jade McCain (jm558v) (02/21/25 1:57 pm): Added "PROPOSED" to the title and "CTU" to the end of the title for consistency.

Jade McCain (jm558v) (02/21/25 3:11 pm): Added Office of the Provost's approval email.

Jade McCain (jm558v) (03/07/25 3:26 pm): Corrected course list format and removed BUS 5920 because that course does not exist.

Jade McCain (jm558v) (03/10/25 8:24 am): Added BUS 5920 back to course list.

Program Change Request

New Program Proposal

Date Submitted: 02/15/25 2:37 pm

Viewing: **PROPOSED : Value-Driven Innovation CT**

Last edit: 03/20/25 9:13 am

Changes proposed by: Melody Lo (mlc2d)

Effective Catalog Edition	FS2025-SP2026
Start Term	Fall 2025
Program Type	Certificate
CIM Prospectus	
Academic Level	Graduate
Program Code	PROPOSED
Department	Economics
Discipline	Economics
Offered by	Other department(s) offering the certificate. Economics
Title	

In Workflow

- 1. RECONOMI Chair
- 2. CCC Secretary
- 3. Social Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. Graduate Council President
- 8. FS Meeting Agenda
- 9. Faculty Senate Chair
- 10. ProvostOffice
- 11. Registrar

Approval Path

- 1. 02/15/25 2:38 pm
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
- 2. 02/21/25 2:14 pm
Jade McCain
(jm558v): Approved
for CCC Secretary
- 3. 02/21/25 2:55 pm
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
- 4. 03/14/25 2:54 pm
Jade McCain
(jm558v): Rollback
to Social Sciences

DSCC Chair for
Pending CCC
Agenda post
5. 03/17/25 11:47 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
6. 03/21/25 2:28 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post

Value-Driven Innovation CT

CIP Code 520799 - 520799

Purpose

Intended Audience

Distance (online) Students
Main Campus Students

Program-Specific Admission

The certificate programs are open to all persons holding a B.S., M.S., or Ph.D. degree in Engineering, Science, and/or Mathematics or is currently accepted into a graduate degree program at Missouri S&T. Once admitted to the program, the student must take the four designated courses (provided in the curriculum section below). To receive a Graduate Certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given three years to complete the program. Students admitted to the certificate program will have non-degree graduate status; however, they will earn graduate credit for the courses they complete. Students who do not have all the prerequisite courses necessary to begin the courses in the certificate program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

GATEWAY FOR ADMISSION TO MASTER'S DEGREE

If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to the M.S. degree program in Economics and Innovation. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degrees.

Program Requirements and Description

Value-driven Innovation Certificate

This industry-focused certificate program in Value-Driven Innovation is designed to empower technology-powered teams and equips students with the knowledge and skills to execute the innovation process from ideation to implementation. Through courses on ideation, project development and finance, market launch, and contemporary tech issues, students will learn a systematic approach to drive purposeful innovation, create value, and succeed in leadership roles within today's technology-driven economy.

Admission:

This certificate program is open to individuals holding a B.S., M.S., or Ph.D. degree in Engineering, Science, and/or Mathematics, or those who are currently accepted into a graduate degree program at Missouri S&T. Upon admission to the program, students must complete the four designated certificate courses (outlined in the required courses section below). To earn the Graduate Certificate, students must maintain an average cumulative grade point of 3.0 or higher in the certificate courses. After admission, students will have three years to complete the program.

Gateway for Admission to Master's Degree:

Students admitted to the certificate program will have non-degree graduate status; however, they will earn graduate credit for the courses they complete. If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to the M.S. degree program in Economics and Innovation. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degrees.

Required Courses:

<u>ECON 5338</u>	Innovation and Value Generation	3
<u>ECON 5543</u>	Innovation Economics and Finance	3
<u>ECON 5648</u>	Innovation to Market	3
<u>ECON 6020</u>	Contemporary Issues in Technology and Innovation	3

Justification for
request

The Value-driven Innovation Certificate program has been approved by the MDHE. As a result, we are in Step 21 of the Approval Process for New Programs. This requires us to create the program (via the DC form) and develop associated new program courses (via the CC form) to seek internal approval from S&T's CCC and Faculty Senate.

Attach Budget [MEI Pro Forma.pdf](#)

System Approval Letter [New Graduate Certificate Proposal in Value-driven Innovationsign.pdf](#)

MDHE Approval [MDHE Approval Letter_ST_December 2024.pdf](#)
Supporting [New Grad Certificate Proposal in Value-driven Innovation.pdf](#)
Documents

Reviewer

Comments

Jade McCain (jm558v) (02/24/25 8:09 am): Added "CT" to the title for consistency.

Jade McCain (jm558v) (02/24/25 1:24 pm): Added "PROPOSED" to program code.

Jade McCain (jm558v) (03/14/25 2:54 pm): Rollback: Rollback per department request.

Program Change Request

Date Submitted: 02/20/25 11:41 am

Viewing: **SCITEC-CTU : Science, Technology, and Society CTU**

Last approved: 06/14/24 1:16 pm

Last edit: 02/20/25 11:41 am

Changes proposed by: Shannon Fogg (sfogg)

Catalog Pages Using
this Program
[History](#)

Effective Catalog Edition	FS2025-SP2026
Start Term	Fall 2025
Program Type	Certificate
Academic Level	Undergraduate
Program Code	SCITEC-CTU
Department	History & Political Science
Discipline	History
Title	

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. 02/20/25 11:42 am
Shannon Fogg (sfogg): Approved for RHISTORY Chair
2. 02/20/25 2:49 pm
Jade McCain (jm558v): Approved for CCC Secretary
3. 02/21/25 8:26 am
Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair
4. 03/21/25 2:28 pm
Jade McCain (jm558v): Approved for Pending CCC Agenda post

History

- 1. Mar 4, 2021 by
Petra Dewitt
(dewittp)
- 2. Aug 3, 2021 by
Crystal Wilson
(wilsoncry)
- 3. Jan 29, 2024 by
Petra Dewitt
(dewittp)
- 4. Jun 14, 2024 by
Shannon Fogg
(sfogg)

Science, Technology, and Society CTU

CIP Code

Intended Audience

Main Campus Students

Program Requirements and Description

Science, Technology, and Society

The undergraduate certificate in Science, Technology, and Society (STS) is designed to provide students with background in the understanding of the field of science, technology, and society. Students who complete this certificate will understand more fully how integrated the perspectives of humanities and the social sciences are in shaping the technological world. Students will learn the valuable quality of knowing how their work is shaped by, and in turn shapes, social values and contexts in an increasingly interconnected world.

REQUIREMENTS:

3 credit hours from

<u>HISTORY 2510</u>	History of Technology	3
<u>HISTORY 3530</u>	History of Science	3
<u>HISTORY 4580</u>	Issues in Science, Technology and Society	3
or <u>PHILOS 4580</u>	Issues in Science, Technology and Society	

<u>POL SCI 4320</u>	The Politics of Innovation	3
9 additional credit hours from (as approved by certificate advisor)		
<u>BIO SCI 1163</u>	Biotechnology in Film	3
<u>BIO SCI 2263</u>	Ecology	3
<u>BIO SCI 2372</u>	Issues in Public Health	3
<u>ECON 4540</u>	Energy Economics	3
<u>ECON 4820</u>	Labor Economics	3
<u>ENGLISH 2243</u>	Science Fiction	3
<u>ENG MGT 4330</u>	Human Factors	3
or <u>PSYCH 4710</u>	Human Factors	
<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>HISTORY 4551</u>	Chicago: Architecture, Technology, Culture	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>PHILOS 4665</u>	Creating Future Cities	3
<u>POL SCI 3300</u>	Principles Of Public Policy	3
<u>POL SCI 4320</u>	The Politics of Innovation	3

<u>POL SCI 4500</u>	Geopolitics and International Security	3
<u>PSYCH 4410</u>	Neuroscience	3
<u>PSYCH 4411</u>	Sensation and Perception	3
<u>PSYCH 4602</u>	Organizational Psychology	3
<u>PSYCH 4700</u>	Industrial Psychology	3
<u>PSYCH 4720</u>	Psychology of Social Technology	3
<u>PSYCH 4993</u>	<u>Psychology of Gender</u>	<u>3</u>
<u>TCH COM 3570</u>	Writing in the Sciences	3
<u>TCH COM 5610</u>	History of Technical Communication	3

Justification for
request

Psych 4993 covers content related to how scientific research is shaped by culture and society (and how bias can enter the research process); how our understanding of gender is shaped by science, technology, and society; and how society shapes who does (and who doesn't) enter into and remain in STEM fields. It fits well with the theme of the certificate. Inclusion requested by the instructor.

Attach Budget

System Approval
Letter

MDHE Approval

Supporting
Documents

Reviewer
Comments

Experimental Change Request

New Proposal

Date Submitted: 02/20/25 12:28 pm

Viewing: **BIO SCI 6001.020: Advanced Molecular Biology**

Last edit: 03/19/25 8:51 am

Changes proposed by: Katie Shannon (shannonk)

Requested Effective Date Fall 2025

Department Biological Sciences (RBIOLSCI)

Discipline Biological Sciences (BIO SCI)

Course Number 6001

Topic ID 020

Experimental Title
Advanced Molecular Biology

Experimental Adv Mol Bio

Abbreviated Course
Title

Co-Listed Course

Instructors
Andrea Scharf

Experimental
Catalog Description

A study of the properties and functions of DNA and RNA that make these macromolecules fundamental to life. Examples of replication, transcription, translation, repair, and regulation will be examined in viruses, prokaryotes, and eukaryotes, along with applications such as molecular diagnostics, gene expression analysis, sequencing, transgenes, and gene editing. Students enrolled in the graduate section will have additional assignments and expectations.

Prerequisite(s)

Corequisite(s)

Field Trip
Statement

Credit Hours	Credit Type	Credit Hours
	Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

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. Graduate Council President
- 8. CAT entry
- 9. Registrar

Approval Path

- 1. 02/20/25 1:04 pm
David Duvernell (duverneld):
Approved for
RBIOLSCI Chair
- 2. 02/20/25 2:24 pm
Jade McCain (jm558v): Approved
for CCC Secretary
- 3. 03/18/25 1:17 pm
Katie Shannon (shannonk):
Approved for
Sciences DSCC Chair
- 4. 03/21/25 2:27 pm
Jade McCain (jm558v): Approved
for Pending CCC
Agenda post

Grading Basis	Graded
Repeatable	No
Justification for experimental course:	Adding a graduate section to the undergraduate lecture will provide needed 6000 level courses for our new PhD program
Reviewer Comments	Jade McCain (jm558v) (03/19/25 8:51 am): Added Topic ID and Grading Basis.

Experimental Change Request

New Proposal

Date Submitted: 02/20/25 12:34 pm

Viewing: **BIO SCI 6001.021: Advanced Molecular Genetics Lab**

Last edit: 03/19/25 8:53 am

Changes proposed by: Katie Shannon (shannonk)

Requested Effective Date Fall 2025

Department Biological Sciences (RBIOLSCI)

Discipline Biological Sciences (BIO SCI)

Course Number 6001

Topic ID 021

Experimental Title
Advanced Molecular Genetics Lab

Experimental Adv Mol Gen Lab

Abbreviated Course
Title

Co-Listed Course

Instructors
Katie Shannon

Experimental
Catalog Description

This course provides experience in the use of a variety of DNA manipulation techniques that are common to molecular studies. These include DNA extraction, restriction mapping, recombinant plasmid construction, DNA sequencing and analysis, and polymerase chain reaction. Students will design and conduct experiments using CRISPR technology. Students will write a grant proposal incorporating CRISPR techniques.

Prerequisite(s)

Corequisite(s)
Advanced Molecular Biology

Field Trip
Statement

Credit Hours	Credit Type	Credit Hours
	Laboratory	2

Total: 2

Required for Majors No

Elective for Majors Yes

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. Graduate Council President
8. CAT entry
9. Registrar

Approval Path

1. 02/20/25 1:04 pm
David Duvernell (duverneld):
Approved for
RBIOLSCI Chair
2. 02/20/25 2:25 pm
Jade McCain (jm558v): Approved
for CCC Secretary
3. 03/18/25 1:17 pm
Katie Shannon (shannonk):
Approved for
Sciences DSCC Chair
4. 03/21/25 2:27 pm
Jade McCain (jm558v): Approved
for Pending CCC
Agenda post

Grading Basis	Graded
Repeatable	No
Justification for experimental course:	Adding a graduate level section for new PhD students who would like to gain experience with CRISPR.
Reviewer	Jade McCain (jm558v) (02/20/25 2:25 pm): Added grading basis.
Comments	Jade McCain (jm558v) (03/19/25 8:53 am): Added Topic ID.

Experimental Change Request

New Proposal

Date Submitted: 02/25/25 5:27 pm

Viewing: **COMP SCI 6001.075: Large Language Models**

Last edit: 03/19/25 11:42 am

Changes proposed by: Venkata Sriram Siddhardh Nadendla (nadendla)

Requested Effective Date	Fall 2025
Department	Computer Science (RCOMPSCI)
Discipline	Computer Science (COMP SCI)
Course Number	6001
Topic ID	075

Experimental Title
Large Language Models

Experimental
Abbreviated Course Title
Large Language Models

Co-Listed Course

Instructors
Suman Maity

Experimental
Catalog Description

This course focuses on the cutting-edge research topics surrounding pre-trained large language models (LLMs). Key topics include the technical foundations of LLMs (BERT, GPT, T5 models, mixture-of-expert models, retrieval-based models etc.), emerging capabilities (knowledge, reasoning, few-shot learning, in-context learning), post-training: instruction fine-tuning, alignment, reinforcement learning with human feedback (RLHF) and constitutional AI. The course will also cover metacognitive capabilities of LLMs alongside critical discussions on security and ethical considerations.

Prerequisite(s)
A grade of "C" or better in Comp Sci 5480 or Comp Sci 5001 (Natural Language Processing).

Corequisite(s)

Field Trip
Statement

Credit Hours	Credit Type	Credit Hours
	Lecture	3

Total: 3

In Workflow

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

Approval Path

1. 02/25/25 5:25 pm
Seung-Jong Park (spxzb): Rollback to Initiator
2. 02/25/25 6:24 pm
Seung-Jong Park (spxzb): Approved for RCOMPSCI Chair
3. 02/27/25 10:39 am
Jade McCain (jm558v): Approved for CCC Secretary
4. 03/11/25 11:28 am
Kelly Liu (liukh): Approved for Engineering DSCC Chair
5. 03/21/25 2:27 pm
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:	Sid Nadendla [2/25/2025]: Dr. Suman Maity wishes to offer this new course in Fall 2025, if approved. This course on Large Language Models (LLMs) is an important addition to our catalog, given the rapid growth and transformative impact of these models on various industries and research domains. LLMs are special topics of Generative AI and this is the first course in S&T that exclusively covers LLMs and Generative AI.
Reviewer	Seung-Jong Park (spxzb) (02/25/25 5:25 pm): Rollback: as requested
Comments	Jade McCain (jm558v) (02/27/25 10:32 am): Added punctuation and Grading Basis. Changed Topic ID to "TBD". Jade McCain (jm558v) (03/11/25 2:39 pm): Assigned Topic ID.

Experimental Change Request

New Proposal

Date Submitted: 02/27/25 10:54 am

Viewing: **FRENCH 3001.006: Language of Tomorrow: French Sci-Fi and the Art of Translation**

Last edit: 02/27/25 2:22 pm

Changes proposed by: Irina Ivliyeva (ivliyeva)

Requested Effective Date	Fall 2025
Department	Arts, Languages & Philosophy (RPHILOSO)
Discipline	French (FRENCH)
Course Number	3001
Topic ID	006

Experimental Title
Language of Tomorrow: French Sci-Fi and the Art of Translation

Experimental
Abbreviated Course Title
French Sci-Fi in Transl

Co-Listed Course

Instructors
Dr. Courtney Webster

Experimental
Catalog Description
This course will introduce students to Francophone science fiction in English translation. We will focus on French language translation, its successes and failures, all within the context of science fiction. Exploring works by Verne, Barjavel, Christin & Mezieres, Hergé, and others, themes encountered include the transmission of French culture, the nature of heroism, the place of humankind vis-a-vis technology, and how the translator endeavored to transmit this information.

Prerequisite(s)
Any French 1XXX or English 1XXX course.

Corequisite(s)

Field Trip
Statement

Credit Hours	Credit Type	Credit Hours
	Lecture	3

Total: 3

In Workflow

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

Approval Path

- 1. 02/27/25 10:56 am
Irina Ivliyeva (ivliyeva): Approved for RPHILOSO Chair
- 2. 02/27/25 11:57 am
Jade McCain (jm558v): Approved for CCC Secretary
- 3. 02/27/25 12:03 pm
Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair
- 4. 03/21/25 2:28 pm
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:	Expand curricular options in upper-level humanities for students of all majors. The course will be used in the course share with UMSL (contact: Violaine White) in the fall 2025, if approved in time for fall 2025, or in Spring 2026. This course will focus on the main features of French science fiction literature from its inception to the 21st century, through the study of articles, comic books, novels and short stories that have been translated into English. Our exploration will bring into focus the intricacies of French language translation, its successes and failures, all within the context of science fiction. We will explore the fantastical, futuristic and steampunk landscapes while chronicling the science, technology and magic therein as we look to understand how the authors, such as Verne, Barjavel, Christin & Mezieres, Hergé, Satrapi, and others, incorporate these elements into the story and how a translator endeavored to transmit, carefully and accurately, this information.
Reviewer Comments	Jade McCain (jm558v) (02/27/25 11:57 am): Added punctuation, grading basis, and extra spaces. Jade McCain (jm558v) (02/27/25 2:22 pm): Assigned Topic ID.

2024-2025 CCC Calendar



CCC Meetings are from 8:15am – 9:30am in Parker Hall 203

CCC INFORMATION	Department submission to Registrar <i>Fridays</i>	DSCC submission to Registrar <i>Fridays</i>	CCC Meeting <i>Tuesdays</i>	Faculty Senate Meeting <i>Thursdays</i>
EC forms for Fall 2024 & Affecting CC forms for Summer 2025 & Spring 2025	July 5, 2024	July 19, 2024	August 6, 2024	September 19, 2024
Non-affecting CC forms for Summer 2025 & Spring 2025	August 23, 2024	September 6, 2024	September 24, 2024	October 24, 2024
	August 30, 2024	October 4, 2024	October 22, 2024	November 21, 2024
EC forms for Spring 2025 & Affecting CC forms for Fall 2025	November 1, 2024	November 15, 2024	December 3, 2024	January 30, 2025
	December 13, 2024	January 3, 2025	January 21, 2025 February 25, 2025 (If needed)	<u>February 27, 2025</u> March 20, 2025
	March 7, 2025	March 21, 2025	April 1, 2025	April 24, 2025
EC forms for Summer 2025 & DC forms & non-affecting CC forms for Fall 2025	April 4, 2025	April 18, 2025	May 6, 2025	June 26, 2025
EC forms for Fall 2025 & Affecting CC forms for Summer 2026 & Spring 2026	July 4, 2025	July 18, 2025	August 5, 2025	TBD

Official dates for Spring 2025 CCC meetings will be determined at a later date.

2025-2026 CCC Calendar



CCC Meetings are from 8:15am – 9:30am in Parker Hall 203

CCC INFORMATION	Department submission to Registrar <i>Fridays</i>	DSCC submission to Registrar <i>Fridays</i>	CCC Meeting <i>Tuesdays</i>	Faculty Senate Meeting <i>Thursdays</i>
EC forms for Fall 2025 & Affecting CC forms for Summer 2026 & Spring 2026	July 4, 2025	July 18, 2025	August 5, 2025	TBD
Non-affecting CC forms for Summer 2026 & Spring 2026	TBD	TBD	TBD	TBD
	TBD	TBD	TBD	TBD
EC forms for Spring 2026 & Affecting CC forms for Fall 2026	TBD	TBD	TBD	TBD
	TBD	TBD	TBD	TBD
	TBD	TBD	TBD TBD (If needed)	<u>TBD</u> TBD
EC forms for Summer 2026 & DC forms & non-affecting CC forms for Fall 2026	TBD	TBD	TBD	TBD

Official dates for Spring 2026 CCC meetings will be determined at a later date.

2025-2026
CCC
Calendar



EC forms for Fall 2026

TBD

TBD

TBD

TBD

Official dates for Spring 2026 CCC meetings will be determined at a later date.

Course Change Request

New Course Proposal

Date Submitted: 02/04/25 11:23 am

Viewing: **ECON 5648 : Innovation to Market**

Also listed as: **CHEM ENG 5648 / MIN ENG 5648 / NUC ENG 5648**

Last edit: 03/18/25 9:11 am

Changes proposed by: Melody Lo (mlc2d)

In Workflow

- 1. RECONOMI Chair
- 2. RCHEMENG Chair
- 3. RMINENG Chair
- 4. NUC ENG Chair
- 5. CCC Secretary
- 6. Engineering DSCC Chair
- 7. Social Sciences DSCC Chair
- 8. Pending CCC Agenda post
- 9. CCC Meeting Agenda
- 10. Campus Curricula Committee Chair
- 11. Graduate Council President
- 12. FS Meeting Agenda
- 13. Faculty Senate Chair
- 14. Registrar
- 15. CAT entry
- 16. Peoplesoft

Approval Path

- 1. 02/04/25 11:33 am
Melody Lo (mlc2d):
Approved for
RECONOMI Chair
- 2. 02/05/25 1:42 pm
Hu Yang (huyang):
Approved for
RCHEMENG Chair
- 3. 02/05/25 1:43 pm
Kwame Awuah-Offei (kabb3): Approved
for RMINENG Chair
- 4. 02/07/25 10:07 am
Joseph Newkirk (jnewkirk):
Approved for NUC
ENG Chair
- 5. 02/21/25 2:16 pm
Jade McCain (jm558v): Approved

ECON 5648 :
PROPOSED: Economics and Innovation MS
PROPOSED: Value-driven Innovation CT

Programs
referencing this
course

Requested Effective Date	Fall 2025
Department	Economics (RECONOMI)
Discipline	Economics (ECON)
Course Number	5648
Title	Innovation to Market
Abbreviated Course Title	Innovation to Market

Co-Listed Course	CHEM ENG 5648	Department
		Chemical and Biochemical Engineering (RCHEMENG)
	MIN ENG 5648	Department
		Mining and Explosives Engineering (RMINENG)
	NUC ENG 5648	Department
		Nuclear Eng & Radiation Sci (RNUCLENG)

Catalog Description

This course provides the tools needed to transform innovative solutions into market-ready products and services, focusing on business model development, value generation, and product management. Students will learn to identify product-market fit, maximize value to customers

and users, and launch successful innovations.

Prerequisite(s):
Econ 5338 and Econ 5543.

Corequisite(s):

Credit Hours

Credit Hours

Credit Type	Credit Hours
Lecture	3

Total: 3

Required for Majors No

Elective for Majors Yes

Communication Intensive No

Communication Emphasized Yes

Grading Basis Graded

Repeatable No

Justification This is a new course for the new MS in Economics and Innovation Program.

Semesters Previously Offered

Term(s) Offered as experimental

Previous Course Code

Is this a MOTR Course?

Reviewer Comments
Jade McCain (jm558v) (02/04/25 3:07 pm): Changed "yes" for elective for majors and added grading basis.
Jade McCain (jm558v) (03/18/25 9:11 am): Selected "Yes" for Communication Emphasized and "No" for Communication Intensive per department request via email on 3/18.

for CCC Secretary
6. 03/11/25 11:33 am
Kelly Liu (liukh):
Approved for
Engineering DSCC
Chair
7. 03/17/25 11:47 am
Cecil Eng Huang
Chua (cchua):
Approved for Social
Sciences DSCC Chair
8. 03/21/25 2:27 pm
Jade McCain
(jm558v): Approved
for Pending CCC
Agenda post