

**Minutes of the Campus Curricula Committee Meeting****October 19, 2021****8:15am, Bertelsmeyer 110H****(For Faculty Senate Meeting of November 11, 2021)**

**Attendees:** Steve Raper, Petra Dewitt, Katie Shannon, Michael Davis, Kyle Perry, Cecil Eng Huang Chua, Michael Gosnell, Kristy Giacomelli-Feys, Marita Tibbetts

The following curriculum forms were discussed and approved:

**Course Change Forms:**

File: 4752.10 COMP SCI 6407 : Internet of Things with Data Science  
File: 4120.3 GEO ENG 5332 : Fundamentals of Groundwater Hydrology  
File: 4823 HISTORY 3600 : World History  
File: 4824 HISTORY 3625 : Slavery and Abolition in Atlantic World  
File: 1630.4 NUC ENG 2406 : Reactor Operations I  
File: 1985.6 POL SCI 4510 : The Politics of the Global South

**Program Change Forms:**

File: 157.35 HIST-BA : History BA  
File: 242.15 HISTORY-BS : Bachelor of Science in History  
File: 104.27 NU ENG-BS : Nuclear Engineering BS  
File: 350.4 GEO HAZ-CT : Geologic Hazards Certificate

**Experimental Course forms:**

File: 4826 EXP ENG 6001.006 : Simulation of Explosive Detonation and Energetic Events

The meeting adjourned at 8:35 am.



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Stephen A. Raper, Chair  
Missouri S&T Campus Curricula Committee

# Course Change Request

Date Submitted: 06/09/21 4:30 pm

Viewing: **COMP SCI 6407 : Internet of Things with Data Science**

File: 4752.10

Last approved: 05/07/21 6:01 am

Last edit: 10/19/21 9:10 am

Changes proposed by: zhupe

Requested	Fall <b>2022</b> <del>2021</del>
Effective Change Date	
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	6407
Title	Internet of Things with Data Science
Abbreviated Course Title	IoT with Data Science

Catalog Description

### In Workflow

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

### Approval Path

1. 06/11/21 5:12 pm  
Samuel Frimpong (frimpong):  
Approved for RCOMPSCI Chair
2. 06/15/21 10:51 am  
Marita Tibbetts (tibbettsmg):

Approved for CCC  
Secretary

3. 07/08/21 11:19  
am

Stephen Raper  
(sraper): Rollback  
to RCOMPSCI  
Chair for  
Engineering DSCC  
Chair

4. 07/08/21 11:40  
am

Samuel Frimpong  
(frimpong):  
Approved for  
RCOMPSCI Chair

5. 07/08/21 11:48  
am

Marita Tibbetts  
(tibbettsmg):  
Rollback to  
RCOMPSCI Chair  
for CCC Secretary

6. 09/08/21 12:29  
pm

Samuel Frimpong  
(frimpong):  
Approved for  
RCOMPSCI Chair

7. 09/14/21 11:41  
am

Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary

8. 10/01/21 1:32 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
9. 10/01/21 1:44 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
10. 10/19/21 9:10 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
11. 10/19/21 9:30 am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

### History

1. May 7, 2021 by  
Peizhen Zhu  
(zhupe)

This course **aims to provide** ~~provides~~ both **a theoretical understanding** and **hands-on experience of Internet of Things and Data Science.** ~~practical treatments.~~ **Part 1 addresses fundamental concepts, key technologies, and development platforms of IoT.** ~~Part1.IoT wireless technologies, IoT security, IoT developmentkit.~~ **Part 2 addresses applied Python programming, data analysis with Pandas, visualization with Matplotlib, machine learning and data analysis using Python.** ~~with Scikit-learn.~~

**Part 3 discusses a variety of research topics in IoT-DS. Deep learning (optional).Part 3:Advanced Topics in IoT-DS (Research-oriented, flipped classroom).**

#### Prerequisites

Graduate standing with reasonable educational background in computer networks, data mining or machine learning, probability and statistics, and programming languages. **Recommended for PhD and thesis-based MS students.**

#### Field Trip

#### Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0
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Total: 3

Required for	No
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Majors

Elective for	No
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Majors

#### Justification for

change:

The current description is not flexible enough to accommodate possible future changes to course content. Also slightly rephrased sentences for better coherence.

#### Semesters

previously

offered as an

experimental

course

#### Co-Listed

Courses:

#### Course Reviewer

#### Comments

**sraper (07/08/21 11:19 am):** Rollback: Someone from your program please contact me about this form.

**tibbettsmg (07/08/21 11:48 am):** Rollback: Please see note from DSCC chair. MT

**tibbettsmg (09/14/21 11:41 am):** missed deadline for Sp22. changed effective date to FS22. mt

**sraper (09/17/21 1:04 pm):** A statement was made in the DSCC with regard to the long prereq statement. Discuss at CCC.

**tibbettsmg (10/19/21 9:10 am):** removed recommended statement from prereq per CCC directive. MT

Key: 4752

[Preview Bridge](#)

# Course Change Request

Date Submitted: 09/14/21 9:46 am

Viewing: **GEO ENG 5332 : Fundamentals of Groundwater Hydrology**

File: 4120.3

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

Last edit: 10/19/21 9:10 am

Changes proposed by: grotekr

Programs  
referencing this  
course

[WATERSC-MS: Water Science and Engineering MS](#)

[GEO SCI-CT: Geoenvironmental Science and Engineering CT](#)

[SUB WAT-CT: Subsurface Water Resources Certificate](#)

[MINEREC-CT: Mine Reclamation CT](#)

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

Other Courses  
referencing this  
course

In The Prerequisites:

[GEO ENG 5381 : Intermediate Subsurface Hydrology And Contaminant Transport Mechs](#)

Requested **Fall 2022 08/17/2015**  
Effective Change  
Date  
Department

In Workflow

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

Approval Path

1. 09/14/21 2:03 pm  
Jeff Cawlfild (jdc): Approved for RGEOSENG Chair
2. 09/15/21 2:02 pm  
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary

Geosciences and Geological and Petroleum  
Engineering

Discipline Geological Engineering (GEO ENG)

Course Number 5332

Title  
Fundamentals of Groundwater Hydrology

Abbreviated Groundwater Hydrology  
Course Title

Catalog  
Description

Focus on fundamental analysis and survey of groundwater hydrology with emphasis on practical geo-environmental and subsurface hydrology issues of interest to working professionals. Topics will include general hydrology, surface and subsurface interconnection, basic groundwater flow and well test analysis, and a brief intro to contaminant transport.

Prerequisites

**Graduate standing.**

3. 10/01/21 1:32 pm  
Stephen Raper  
(sraper):  
Approved for  
Engineering DSCC  
Chair
4. 10/01/21 1:46 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 10/19/21 9:11 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 10/19/21 9:30 am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

History

1. Feb 9, 2015 by  
norbert

Field Trip

Statement

none

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Required for

No

Majors

Elective for

No ~~Yes~~

Majors

Justification for  
change:

Geo Eng 5332 is a distance course intended for graduate students only.

Undergraduate students should enroll in a similar course that is offered on-campus.

Semesters

previously

offered as an  
experimental

course

FS 13, FS 14

Co-Listed

Courses:

Course Reviewer

Comments

**sraper (09/17/21 1:05 pm):** Question of relevance of a 5xxx course having graduate standing as a prereq but it is somewhat common already. discuss at CCC.

Key: 4120

[Preview Bridge](#)

# Course Change Request

## New Course Proposal

Date Submitted: 09/08/21 4:00 pm

Viewing: **HISTORY 3600 : World History**

File: 4823

Last edit: 10/19/21 9:11 am

Changes proposed by: dewittp

Programs  
referencing this  
course

[HIST-BA: History BA](#)

[HISTORY-BS: Bachelor of Science in History](#)

Requested	Fall 2022
Effective Change	
Date	
Department	History and Political Science
Discipline	History (HISTORY)
Course Number	3600
Title	World History
Abbreviated	World History
Course Title	

Catalog  
Description

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
10. CAT entry
11. Peoplesoft

Approval Path

1. 09/09/21 9:21 am  
Michael Bruening (bruening):  
Approved for  
RHISTORY Chair
2. 09/15/21 2:07 pm  
Marita Tibbetts (tibbettsmg):

- Approved for CCC Secretary
3. 09/15/21 2:13 pm  
Petra Dewitt  
(dewittp):  
Approved for Arts & Humanities  
DSCC Chair
4. 10/01/21 1:47 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for Pending CCC  
Agenda post
5. 10/19/21 9:11 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC Meeting Agenda
6. 10/19/21 9:30 am  
Stephen Raper  
(sraper):  
Approved for Campus Curricula  
Committee Chair

This is an introductory survey of world history, by which is meant an overview of major processes and interactions in the development of human society since the appearance of hominids ca. 3 million years ago. It emphasizes global patterns and connections in political, social, cultural, and economic history, and adopts a global geographical perspective.

#### Prerequisites

History 1100 or History 1200 or History 1300 or History 1310.

#### Field Trip

#### Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0
Total: 3				
Required for Majors	No			
Elective for Majors	Yes			

Justification for  
new course:

Course has been taught twice and is now part of a new History BA and BS degree requirement that students must take at least three hours from a list of non-Western, marginalized or minority group focused courses.

Semesters  
previously  
offered as an  
experimental  
course

Fall 2019 (21 students), Fall 2021 (17 students)

Co-Listed  
Courses:

Course Reviewer  
Comments

**tibbettsmg (09/15/21 2:07 pm):** enrollment verified. updated term to FS22. mt

Key: 4823

[Preview Bridge](#)

# Course Change Request

## New Course Proposal

Date Submitted: 09/08/21 4:01 pm

Viewing: **HISTORY 3625 : Slavery and Abolition in Atlantic World**

File: 4824

Last edit: 10/19/21 9:12 am

Changes proposed by: dewittp

Programs  
referencing this  
course

[HIST-BA: History BA](#)

[HISTORY-BS: Bachelor of Science in History.](#)

Requested	Fall 2022
Effective Change Date	
Department	History and Political Science
Discipline	History (HISTORY)
Course Number	3625
Title	Slavery and Abolition in Atlantic World
Abbreviated Course Title	Slavery Atlantic World

Catalog  
Description

### 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
10. CAT entry
11. Peoplesoft

### Approval Path

1. 09/09/21 9:21 am  
Michael Bruening  
(bruening):  
Approved for  
RHISTORY Chair
2. 09/15/21 2:09 pm  
Marita Tibbetts  
(tibbettsmg):

- Approved for CCC  
Secretary
3. 09/15/21 2:14 pm  
Petra Dewitt  
(dewittp):  
Approved for Arts  
& Humanities  
DSCC Chair
4. 10/01/21 1:48 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 10/19/21 9:12 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 10/19/21 9:30 am  
Stephen Raper  
(sraper):  
Approved for  
Campus Curricula  
Committee Chair

This course explores the role of slavery in the history of the Americas, Europe, and Africa. Focusing on the development of "New World Slavery," students will be able to critique the extent to which Atlantic slavery influenced the history of race, capitalism, and liberty in the early modern period.

#### Prerequisites

History 1100 or History 1200 or History 1300 or History 1310.

#### Field Trip

#### Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0
Total: 3				
Required for Majors	No			
Elective for Majors	Yes			

Justification for  
new course:

The course has been taught twice but is now also part of a new History BA and BS requirement that students must take at least three hours from a list of non-western, marginalized or minority group focused courses.

Semesters  
previously  
offered as an  
experimental  
course

Spring 2019 (19 students), Spring 2021 (13 students)

Co-Listed  
Courses:

Course Reviewer  
Comments

**tibbettsmg (09/15/21 2:09 pm):** enrollment verified. updated term to fs22. mt

Key: 4824

[Preview Bridge](#)

# Course Change Request

Date Submitted: 09/08/21 12:53 pm

Viewing: **NUC ENG 2406 : Reactor Operations I**

File: 1630.4

Last approved: 03/03/21 6:01 am

Last edit: 09/14/21 11:42 am

Changes proposed by: schlegelj

Programs  
referencing this  
course

[NU ENG-BS: Nuclear Engineering BS](#)

Requested	Fall <b>2022</b> <del>2021</del>
Effective Change Date	
Department	Mining & Nuclear Engineering
Discipline	Nuclear Engineering (NUC ENG)
Course Number	2406
Title	Reactor Operations I
Abbreviated Course Title	Reactor Operations I

Catalog  
Description

In Workflow

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

Approval Path

1. 09/08/21 12:54  
pm  
AYODEJI Alajo  
(alajoa):  
Approved for NUC  
ENG Chair
2. 09/14/21 11:42  
am  
Marita Tibbetts  
(tibbettsmg):

- Approved for CCC Secretary
3. 10/01/21 1:33 pm  
Stephen Raper  
(sraper):  
Approved for Engineering DSCC Chair
4. 10/01/21 1:50 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for Pending CCC Agenda post
5. 10/19/21 9:12 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC Meeting Agenda
6. 10/19/21 9:30 am  
Stephen Raper  
(sraper):  
Approved for Campus Curricula Committee Chair

### History

1. Mar 3, 2021 by  
grahamjose  
(1630.1)

A first course in reactor operations training and practical approach to nuclear reactor concepts. Students will receive hands-on training and are encouraged to take the NRC Reactor Operator's Exam.

### Prerequisites

Math 1214 or Math **1208 or Math 1211.** ~~1208.~~

Field Trip  
Statement

Credit Hours      LEC: 0              LAB: 1              IND: 0              RSD: 0

Total: 1

Required for  
Majors              No

Elective for  
Majors              Yes

Justification for  
change:

Updates to calculus prerequisite, as requested by campus.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer

Comments

**tibbettsmg (09/14/21 11:42 am):** updated eff. term to FS22. mt

Key: 1630

[Preview Bridge](#)

# Course Change Request

Date Submitted: 09/29/21 2:24 pm

Viewing: **POL SCI 4510 : The Politics of the Global South ~~Third World~~**

File: 1985.6

Last approved: 05/06/16 3:33 am

Last edit: 09/29/21 2:24 pm

Changes proposed by: dewittp

Programs  
referencing this  
course

[MUL&DIV-MI: Multiculture & Diversity Minor](#)

Requested **Fall 2022** ~~08/14/2018~~

Effective Change

Date

Department History and Political Science

Discipline Political Science (POL SCI)

Course Number 4510

Title

The Politics of the **Global South** ~~Third World~~

Abbreviated Politics of **Global South** ~~Third~~

Course Title ~~World~~

Catalog  
Description

## 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
10. CAT entry
11. Peoplesoft

## Approval Path

1. 09/29/21 3:06 pm  
Michael Bruening (bruening):  
Approved for RHISTORY Chair
2. 09/29/21 3:21 pm  
Marita Tibbetts (tibbettsmg):

Approved for CCC  
Secretary

3. 09/29/21 3:23 pm

Petra Dewitt

(dewittp):

Approved for Arts  
& Humanities

DSCC Chair

4. 10/01/21 1:50 pm

Marita Tibbetts

(tibbettsmg):

Approved for  
Pending CCC

Agenda post

5. 10/19/21 9:12 am

Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Meeting Agenda

6. 10/19/21 9:30 am

Stephen Raper

(sraper):

Approved for  
Campus Curricula  
Committee Chair

## History

1. May 6, 2016 by  
dewittp (1985.1)

This course explores the processes and **politics problems** of the **developing** nations of the **Global South, defined as most of Asia, Africa, and Latin America. world**. It examines the internal political processes of **these nations and regions, third world nations**, as well as **their the** position **of the third world** in international affairs.

## Prerequisites

Pol Sci 1200 or History 1200 or History 1300 or History 1310.

Field Trip  
Statement

Credit Hours      LEC: 3              LAB: 0              IND: 0              RSD: 0

Total: 3

Required for  
Majors              No

Elective for  
Majors              **Yes** ~~No~~

Justification for  
change:

We would like to change the name and catalogue description because the "Third World" concept is outdated and can be seen as a derogatory term. This course is also part of the proposed Intercultural Communication certificate.

Semesters  
previously  
offered as an  
experimental  
course

Co-Listed  
Courses:

Course Reviewer  
Comments

Key: 1985

[Preview Bridge](#)

## Program Change Request

Date Submitted: 09/15/21 2:17 pm

Viewing: **HIST-BA : History BA**

File: 157.35

Last approved: 05/05/21 8:29 am

Last edit: 09/15/21 2:22 pm

Changes proposed by: dewittp

Catalog Pages Using this Program

[History.](#)

Start Term

Fall **2022** ~~2021~~

Program Code

HIST-BA

Department

History and Political Science

Title

History BA

### Program Requirements and Description

### 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
10. Kristy Giacomelli-  
Feys

### Approval Path

1. 09/09/21 9:22 am  
Michael Bruening  
(bruening):  
Approved for  
RHISTORY Chair
2. 09/15/21 2:14 pm  
Marita Tibbetts  
(tibbettsmg):  
Rollback to Initiator
3. 09/15/21 2:21 pm  
Michael Bruening  
(bruening):  
Approved for  
RHISTORY Chair
4. 09/15/21 2:23 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
5. 09/15/21 2:31 pm  
Petra Dewitt  
(dewittp): Approved  
for Arts &  
Humanities DSCC  
Chair
6. 10/01/21 1:47 pm  
Marita Tibbetts

(tibbettsmg):

Approved for

Pending CCC

Agenda post

7. 10/19/21 9:12 am

Marita Tibbetts

(tibbettsmg):

Approved for CCC

Meeting Agenda

8. 10/19/21 9:30 am

Stephen Raper

(sraper): Approved

for Campus

Curricula

Committee Chair

## History

1. Aug 6, 2014 by  
Lahne Black (lahne)
2. Jul 21, 2015 by  
pantaleoa
3. Jun 27, 2016 by  
Petra Dewitt  
(dewittp)
4. Mar 27, 2017 by  
Petra Dewitt  
(dewittp)
5. Jun 18, 2018 by  
Shannon Fogg  
(sfogg)
6. Jan 30, 2020 by  
Petra Dewitt  
(dewittp)
7. May 5, 2021 by  
Petra Dewitt  
(dewittp)

## Bachelor of Arts History

(In addition to general requirements for bachelor of arts degree.)

<a href="#">HISTORY 1300</a>	American History To 1877	3
<a href="#">HISTORY 1310</a>	American History Since 1877	3
<a href="#">HISTORY 4790</a>	Historiography	3
<a href="#">HISTORY 2791</a>	Historical Research Methods	3
2 American History Electives		6
2 European History Electives		6

2 History Electives		6
<b>3 hours of Electives must come from a non-western, marginalized or minority focused course, such as</b>		
<b><u>HISTORY 2430</u></b>	<b>History of the American Pacific</b>	
<b><u>HISTORY 3241</u></b>	<b>Course HISTORY 3241 Not Found</b>	
<b><u>HISTORY 3600</u></b>	<b>Course HISTORY 3600 Not Found</b>	
<b><u>HISTORY 3625</u></b>	<b>Course HISTORY 3625 Not Found</b>	
<b><u>HISTORY 3660</u></b>	<b>Modern East Asia</b>	
<b><u>HISTORY 3665</u></b>	<b>History of Japan</b>	
<b><u>HISTORY 4245</u></b>	<b>Nazi Germany and the Holocaust</b>	
<b><u>HISTORY 4246</u></b>	<b>War and Society in Twentieth-Century Europe</b>	
Total Credits		30

Note: History majors are also required to complete [HISTORY 1100](#) and [HISTORY 1200](#) as part of the general education requirements for the B.A. In addition, 9 hours of the 30 major hours must be taken at the 3000 or 4000 level.

Note: History majors interested in graduate or professional school should take [HISTORY 4097](#) as independent research under the guidance of a faculty member in a short period (one semester).

Note: History majors must complete an experiential learning requirement. They can meet this requirement by taking [HISTORY 4085](#) or [HISTORY 4097](#) or study abroad, among other options, in consultation with their advisor.

Note: Entering students will normally take [ENGLISH 1120](#) either semester of the first year.

## Secondary Education Emphasis Area

You may earn a B.A. degree in history from Missouri S&T and certification to teach in the schools of Missouri. This program may be completed in four academic years and student teaching is arranged with public schools anywhere in the state.

Students interested in the certification program should consult with the advisor for history/education majors in the department of history and political science for requirements particular to those interested in this degree. Students should process a change of major form to designate history with an emphasis area of secondary education.

History students must complete 127 credit hours, including requirements for teacher education listed in this catalog. A minimum grade of "C" is required by the department in all history and political science courses counted towards this degree. Students must take the following courses:

Communication Skills: 9 hours		
<a href="#">ENGLISH 1120</a>	Exposition And Argumentation	3
<a href="#">ENGLISH 1160</a>	Writing And Research	3
<a href="#">SP&amp;M S 1185</a>	Principles Of Speech	3
Humanities: 12 hours with at least one course from the first three areas		
Art or Music or Theater Appreciation		
Philosophy		
Literature		
Foreign Language		
<a href="#">ETYM 4306</a>	Introduction To Etymology	3

Social Sciences: 18 hours		
<a href="#">POL SCI 1200</a>	American Government	3
Political Science Elective <small>Must be 2XXX or above</small>		3
<a href="#">ECON 1100</a>	Principles Of Microeconomics	3
or <a href="#">ECON 1200</a>	Principles Of Macroeconomics	
<a href="#">PSYCH 1101</a>	General Psychology	3
<a href="#">PSYCH 4600</a>	Social Psychology	3
<a href="#">HISTORY 2110</a>	World Regional Geography	3
Natural Sciences: 7 hours = 2 courses and 1 lab		
One course in Physics or Chemistry or Geology and one course in Biology		
One laboratory in any of the above science courses		
Mathematics: 3 hours		
<a href="#">MATH 1120</a>	College Algebra (or higher)	3-5
or <a href="#">MATH 1103</a>	Fundamentals Of Algebra	
or <a href="#">MATH 1140</a>	College Algebra	
Clinical Experience: 16 hours		
<a href="#">EDUC 1104</a>	Teacher Field Experience I	1
<a href="#">EDUC 1164</a>	Teacher Field Experience II	2
<a href="#">EDUC 3298</a>	Teacher Field Experience III	1
<a href="#">EDUC 4299</a>	Student Teaching	12
Professional Requirements: 26 hours		
<a href="#">EDUC 1040</a>	Perspectives In Education	2
<a href="#">EDUC 1174</a>	School Organization and Administration For Teachers	2
<a href="#">EDUC 2310</a>	Education Of The Exceptional Child	3
<a href="#">EDUC 3216</a>	Instructional Literacy in the Content Area	3
<a href="#">EDUC 3280</a>	Instructional Strategies in the Content Area	3
<a href="#">EDUC 3340</a>	Assessment of Student Learning	3
<a href="#">EDUC 4298</a>	Student Teaching Seminar	1
<a href="#">ENGLISH 3170</a>	Teaching And Supervising Reading and Writing	3
<a href="#">PSYCH 2300/EDUC 2102</a>	Educational Psychology	3
<a href="#">PSYCH 3310</a>	Developmental Psychology	3
History Requirements: 36 hours		
<a href="#">HISTORY 1100</a>	Early Western Civilization	3
<a href="#">HISTORY 1200</a>	Modern Western Civilization	3
<a href="#">HISTORY 1300</a>	American History To 1877	3
<a href="#">HISTORY 1310</a>	American History Since 1877	3
<a href="#">HISTORY 2791</a>	Historical Research Methods	3
<a href="#">HISTORY 4790</a>	Historiography	3
American History Electives		6

European History Electives	6
History Electives	6

#### Justification for request

The history/political science department now requires that students take at least three credit hours from a list of non-western, marginalized or minority group focused courses to ensure, in the interest of diversity and inclusion, that our graduates gain a greater appreciation for the historical contributions and struggles of those outside of the privileged Western elites.

#### Supporting Documents

#### Course Reviewer Comments

**tibbettsmg (09/15/21 2:14 pm):** Rollback: Educ 3298 is only 1 credit hour now and will need to be updated accordingly.

**tibbettsmg (09/15/21 2:22 pm):** updated term to FS22. mt

Key: 157

## Program Change Request

Date Submitted: 09/16/21 12:20 pm

Viewing: **HISTORY-BS : Bachelor of Science in History**

File: 242.15

Last approved: 01/30/20 3:27 pm

Last edit: 09/30/21 12:54 pm

Changes proposed by: dewittp

Catalog Pages Using this Program  
[History](#)

Start Term

**Spring 2022** ~~Fall 2020~~

Program Code

HISTORY-BS

Department

History and Political Science

Title

Bachelor of Science in History

### Program Requirements and Description

### 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
10. Kristy Giacomelli-Feys

### Approval Path

1. 09/09/21 9:22 am  
Michael Bruening (bruening):  
Approved for RHISTORY Chair
2. 09/15/21 2:18 pm  
Marita Tibbetts (tibbettsmg):  
Rollback to Initiator
3. 09/16/21 12:20 pm  
Michael Bruening (bruening):  
Approved for RHISTORY Chair
4. 09/30/21 12:55 pm  
Marita Tibbetts (tibbettsmg):  
Approved for CCC Secretary
5. 09/30/21 4:05 pm  
Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair
6. 10/01/21 1:48 pm  
Marita Tibbetts

- (tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
- 7. 10/19/21 9:12 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
- 8. 10/19/21 9:30 am  
Stephen Raper  
(sraper): Approved  
for Campus  
Curricula  
Committee Chair

### History

1. Jun 27, 2016 by  
Petra Dewitt  
(dewittp)
2. Jul 27, 2016 by  
Crystal Wilson  
(wilsoncry)
3. Dec 1, 2016 by  
Petra Dewitt  
(dewittp)
4. Jan 30, 2020 by  
Petra Dewitt  
(dewittp)

## Bachelor of Science History

Students must take a minimum of 120 hours for a Bachelor of Science degree in history, and obtain a grade point average of 2.0. These requirements for the B.S. are in addition to credit received for basic ROTC.

The B.S. in history requires the following:

1. ~~ENGLISH 1120 (entering students will normally take ENGLISH 1120 within their first year of study) and one other writing intensive course outside their major, which may include ENGLISH 1160, ENGLISH 1170, or ENGLISH 3560.~~ **English composition** (6 hours)

<b><u>ENGLISH 1120</u></b>	<b>Exposition And Argumentation <sup>1</sup></b>	<b>3</b>
<b>One other writing intensive course outside their major, such as</b>		<b>3</b>
<b><u>ENGLISH 1160</u></b>	<b>Writing And Research</b>	
<b><u>ENGLISH 1170</u></b>	<b>Creative Writing</b>	
<b><u>ENGLISH 3560</u></b>	<b>Technical Writing</b>	

2. Math and **Sciences (18 hours).** ~~Sciences.~~

The general requirements for a B.S. call for at least 18 hours in biological, physical (chemistry, geology, physics), and mathematical (mathematics, statistics, computer science, and information science and technology) **sciences**.

**sciences:**

<b>1 Biological Science course</b>	
<b>1 Physical Science course <sup>2</sup></b>	
<b>1 Laboratory course</b>	
<b>1 Math course <sup>3</sup></b>	
<b>In addition to these requirements, students may also count toward 18 hours</b>	
<b><u>STAT 1115</u></b>	<b>Statistics For The Social Sciences I</b>
<b>Up to 3 hours from</b>	
<b><u>HISTORY 2510</u></b>	<b>History of Technology</b>
<b><u>HISTORY 3510</u></b>	<b>Twentieth Century Technology And Society</b>
<b><u>HISTORY 3530</u></b>	<b>History of Science</b>
<b><u>HISTORY 3534</u></b>	<b>History of Medieval and Early Modern Science</b>
<b>3 hours of Psych courses not listed elsewhere, such as</b>	
<b><u>PSYCH 2200</u></b>	<b>Research Methods</b>

~~The B.S. in history requires at least one course from each of the biological and physical sciences, one lab, and at least one math course at the level of college algebra or higher. In addition to these requirements, students may count STAT 1115, up to 3 hours from psychology classes (PSYCH 2200 preferred), 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. (18 hours) 3. Humanities. Students must take 12 hours in humanities other than history with at least one course from literature, philosophy, and fine arts (Art, Music, or Theater Appreciation). Students may take courses in language and humanities other than history to meet the 12 hours requirement. Humanities (12 hours). hours)~~

<b>Students must take 12 hours in humanities other than history with at least</b>	
<b>1 Literature course</b>	
<b>1 Philosophy course</b>	
<b>1 Fine Arts course <sup>4</sup></b>	
<b>Students may take language course or humanities course other than history to meet 12 hours requirement.</b>	

**4. Social Sciences (12 hours).**

<b><u>POL SCI 1200</u></b>	<b>American Government</b>	<b>3</b>
<b>At least one course in two from three areas:</b>		
<b>Economics</b>		
<b>Political Science</b>		
<b>Psychology</b>		
<b>Students may transfer up to 3 hours of Sociology to meet 12 hours requirement <sup>5</sup></b>		

~~Social Sciences. Students must take 12 hours in social sciences. Students must take POL SCI 1200 and at least one course in two from the three areas: economics, political science, and psychology. At the discretion of the major adviser, students may transfer up to 3 hours of Sociology to meet the 12 hours requirement. (12 hours) 5. History. Students must take 36 hours in required history courses, including HISTORY 1100, HISTORY 1200, HISTORY 1300, HISTORY 1310, HISTORY 2701, and HISTORY 4700 (18 hours) and at least 18 hours in~~

~~history electives, including at least 6 hours in American history and at least 6 hours in European history. Nine of these 18 hours of history electives must be at or above the 3000 level. The student must earn a grade of C or better in these required courses.~~ **History** (36 hours)

<b>Students must take 36 hours in required history courses, including <sup>7</sup></b>		
<b><u>HISTORY 1100</u></b>	<b>Early Western Civilization</b>	<b>3</b>
<b><u>HISTORY 1200</u></b>	<b>Modern Western Civilization</b>	<b>3</b>
<b><u>HISTORY 1300</u></b>	<b>American History To 1877</b>	<b>3</b>
<b><u>HISTORY 1310</u></b>	<b>American History Since 1877</b>	<b>3</b>
<b><u>HISTORY 2791</u></b>	<b>Historical Research Methods</b>	<b>3</b>
<b><u>HISTORY 4790</u></b>	<b>Historiography</b>	<b>3</b>
<b>At least 18 hours of Electives, consisting of</b>		
<b>2 American History Electives</b>		<b>6</b>
<b>2 European History Electives</b>		<b>6</b>
<b>1 Elective must come from a non-western, marginalized or minority focused course, such as</b>		<b>3</b>
<b><u>HISTORY 2430</u></b>	<b>History of the American Pacific</b>	
<b><u>HISTORY 3241</u></b>	<b>Course HISTORY 3241 Not Found</b>	
<b><u>HISTORY 3600</u></b>	<b>Course HISTORY 3600 Not Found</b>	
<b><u>HISTORY 3625</u></b>	<b>Course HISTORY 3625 Not Found</b>	
<b><u>HISTORY 3660</u></b>	<b>Modern East Asia</b>	
<b><u>HISTORY 3665</u></b>	<b>History of Japan</b>	
<b><u>HISTORY 4245</u></b>	<b>Nazi Germany and the Holocaust</b>	
<b><u>HISTORY 4246</u></b>	<b>War and Society in Twentieth-Century Europe</b>	

6. Electives Credit. Each student will elect sufficient additional courses to complete a minimum of 120 credit hours, which may include up to 12 hours in engineering courses at the discretion of the major adviser. At least 9 hours of these electives must be at the 3000 or above level, although substitutions may be permitted at the discretion of the major adviser. All electives must accumulate to at least a 2.0 grade point average.

<b>1</b>	<b>Entering students will normally take English 1120 within their first year of study.</b>
<b>2</b>	<b>Chemistry, Physics, Geology</b>
<b>3</b>	<b>College Algebra or higher</b>
<b>4</b>	<b>Art, Music, or Theater Appreciation</b>
<b>5</b>	<b>With major advisor approval</b>
<b>6</b>	<b>9 of these 18 hours of history electives must be at or above the 3000 level.</b>
<b>7</b>	<b>The student must earn a grade of C or better in these required courses.</b>

**Justification for request**

The history/political science department now requires that students take at least three credit hours from a list of non-western, marginalized or minority group focused courses to ensure, in the interest of diversity and inclusion, that our graduates gain a greater appreciation for the historical contributions and struggles of those outside of the privileged Western elites.

**Supporting Documents**

## Course Reviewer Comments

**tibbettsmg (09/15/21 2:18 pm):** Rollback: program needs to be formatted with course lists and/or with plan of study grids rather than all free format text. formatting similar to the BA History is acceptable.

**tibbettsmg (09/30/21 12:54 pm):** updated formatting. mt

Key: 242

## Program Change Request

Date Submitted: 09/08/21 12:52 pm

Viewing: **NU ENG-BS : Nuclear Engineering BS**

File: 104.27

Last approved: 06/11/21 8:11 am

Last edit: 09/14/21 11:46 am

Changes proposed by: schlegelj

Catalog Pages Using this Program  
[Nuclear Engineering](#)

Start Term

Fall **2022** ~~2024~~

Program Code

NU ENG-BS

Department

Mining & Nuclear Engineering

Title

Nuclear Engineering BS

### Program Requirements and Description

### In Workflow

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

### Approval Path

1. 09/08/21 12:53 pm  
AYODEJI Alajo  
(alajoa): Approved for NUC ENG Chair
2. 09/14/21 11:46 am  
Marita Tibbetts  
(tibbetmsg): Approved for CCC Secretary
3. 10/01/21 1:33 pm  
Stephen Raper  
(sraper): Approved for Engineering DSCC Chair
4. 10/01/21 1:49 pm  
Marita Tibbetts  
(tibbetmsg): Approved for Pending CCC Agenda post
5. 10/19/21 9:12 am  
Marita Tibbetts  
(tibbetmsg): Approved for CCC Meeting Agenda
6. 10/19/21 9:30 am  
Stephen Raper

(sraper): Approved  
for Campus  
Curricula  
Committee Chair

## History

1. Aug 6, 2014 by  
Lahne Black (lahne)
2. Jul 21, 2015 by  
pantaleoa
3. Mar 27, 2017 by  
Hyoung-Koo Lee  
(leehk)
4. Jul 6, 2020 by  
Brittany Parnell  
(ershenb)
5. Jun 11, 2021 by  
Joshua Schlegel  
(schlegelj)

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## Bachelor of Science Nuclear Engineering

Entering freshmen desiring to study nuclear engineering will be admitted to the Foundational Engineering and Computing Program. They will, however, be permitted, to state a nuclear engineering preference, which will be used as a consideration for available departmental scholarships.

For the bachelor of science degree in nuclear engineering a minimum of 128 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. A student must maintain an average of at least two grade points overall and for all courses taken in nuclear engineering.

Each student's program of study must contain a minimum of 21 credit hours of course work from the humanities and the social sciences areas and should be chosen according to the following rules:

1. All students are required to take one American history course and one economics course. The history course is to be selected from [HISTORY 1200](#), [HISTORY 1300](#), [HISTORY 1310](#), or [POL SCI 1200](#). The economics course may be either [ECON 1100](#) or [ECON 1200](#).
2. Students must take [ENGLISH 1120](#). Students must also take one communications elective, selected from [ENGLISH 1160](#), [ENGLISH 3560](#), or [SP&M S 1185](#).
3. The remaining nine hours must be taken in humanities or social sciences at the 1000 level or above. Foreign language courses numbered 1180 can be considered to be one of these courses. (Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 4000 level.)
4. Skill courses are not allowed to meet humanities and social sciences requirements except in foreign languages. Students who select the foreign language option are urged to take more than one course.
5. Special topics, special problems courses and honors seminars are allowed only by petition to and approval by the student's department chair.

The nuclear engineering program at Missouri S&T is characterized by its focus on the scientific basics of engineering and its innovative application. The necessary interrelations among the various topics, the engineering disciplines, and the other professions as they naturally

come together in the solution of real world problems are emphasized as research, analysis, synthesis, and design are presented and discussed through classroom and laboratory instruction.

<b>Freshman Year</b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
<a href="#">ENGLISH 1120</a>	3	<a href="#">HISTORY 1200</a> , or <a href="#">1300</a> , or <a href="#">1310</a> , or <a href="#">POL SCI 1200</a>	3
<a href="#">FR ENG 1100</a>	1	<a href="#">MATH 1215</a>	4
<a href="#">MATH 1214</a> or <a href="#">1211</a>	4	<a href="#">MECH ENG 1720</a>	3
<a href="#">NUC ENG 1105</a> <sup>1</sup>	1	<a href="#">PHYSICS 1135</a>	4
<a href="#">CHEM 1100</a>	1	Elective-Hum or Soc Sci <sup>2</sup>	3
<a href="#">CHEM 1310</a>	4		
<a href="#">CHEM 1319</a>	1		
	15		17
<b>Sophomore Year</b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
<a href="#">CIV ENG 2200</a>	3	<a href="#">CIV ENG 2210</a>	3
<a href="#">COMP SCI 1972</a> , or <a href="#">1970</a> , or <a href="#">1971</a>	2	<a href="#">ECON 1100</a> or <a href="#">1200</a>	3
<a href="#">COMP SCI 1982</a> , or <a href="#">1980</a> , or <a href="#">1981</a>	1	<a href="#">MATH 3304</a>	3
<a href="#">MATH 2222</a>	4	<a href="#">MECH ENG 2519</a>	3
<a href="#">NUC ENG 2105</a>	2	<a href="#">NUC ENG 2406</a>	1
<a href="#">PHYSICS 2135</a>	4	<a href="#">NUC ENG 3103</a> , or <a href="#">PHYSICS 2305</a> , or <a href="#">PHYSICS 2311</a>	3
	16		16
<b>Junior Year</b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
<a href="#">ELEC ENG 2800</a>	3	<a href="#">ENGLISH 1160</a> , or <a href="#">3560</a> , or <a href="#">SPM S 1185</a>	3
<a href="#">MET ENG 2110</a>	3	<a href="#">NUC ENG 4312</a> or <a href="#">5312</a>	3
<a href="#">NUC ENG 3205</a>	3	<a href="#">NUC ENG 3223</a>	3
<a href="#">NUC ENG 3221</a>	3	<a href="#">NUC ENG 4203</a> or <a href="#">5203</a>	3
<a href="#">COMP SCI 3200</a> (OR 3000 Level MATH, 5000 Level STAT)	3	<a href="#">STAT 3115</a> , or <a href="#">3111</a> , or <a href="#">3113</a> , or <a href="#">3117</a>	3
		Nuclear Engineering Elective <sup>3</sup>	3
	15		18
<b>Senior Year</b>			
<b>First Semester</b>	<b>Credits</b>	<b>Second Semester</b>	<b>Credits</b>
<a href="#">NUC ENG 4207</a> or <a href="#">5207</a>	3	<a href="#">NUC ENG 4438</a> or <a href="#">5438</a>	2
<a href="#">NUC ENG 4241</a> or <a href="#">5241</a>	3	<a href="#">NUC ENG 4497</a>	3
<a href="#">NUC ENG 4428</a> or <a href="#">5428</a>	3	Technical Elective - 3000 or 4000 level <sup>4</sup>	3
<a href="#">NUC ENG 4496</a>	2	Technical Elective - 4000 Level	3
Nuclear Engineering Elective	3	Elective - Hum or Soc Sc	3

Elective-Hum or Soc Sc	3	
	17	14
Total Credits: 128		

**Note:** Minimum credit hours for graduation is 128.

1	Nuclear Engineering students are expected to take Nuclear Technology Applications ( <a href="#">NUC ENG 1105</a> ) during their Freshman year. However, transfer students are exempt. Students who attend the Nuclear Engineering Summer Camp as high school students may have this requirement waived.
2	Humanities and Social Science to be taken in accordance with the policy described above.
3	Any Nuclear Engineering course 4000 level or higher.
4	Any Math, Science, or Engineering courses at the appropriate level.

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

#### Justification for request

Request from campus to update introductory calculus language.

#### Supporting Documents

#### Course Reviewer Comments

**tibbettsmg (09/14/21 11:46 am):** updated eff. term to FS22. credit hours for 4496/4428/5428 in plan of study grid are accurate effective Sp22 and ok as is. mt

Key: 104

## Program Change Request

Date Submitted: 09/14/21 9:31 am

Viewing: **GEO HAZ-CT : Geologic Hazards Certificate**

File: 350.4

Last approved: 07/01/20 1:38 pm

Last edit: 09/15/21 2:04 pm

Changes proposed by: grotekr

Catalog Pages Using this Program  
[Geological Engineering](#)

Start Term

Fall **2022** ~~2020~~

Program Code

GEO HAZ-CT

Department

Geosciences and Geological and Petroleum Engineering

Title

Geologic Hazards Certificate

### Program Requirements and Description

### In Workflow

1. **RGEOSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. **Faculty Senate Chair**
9. **Registrar**
10. **Kristy Giacomelli-Feys**

### Approval Path

1. 09/14/21 2:04 pm  
Jeff Cawfield (jdc):  
Approved for  
RGEOSENG Chair
2. 09/15/21 2:04 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Secretary
3. 10/01/21 1:32 pm  
Stephen Raper  
(sraper): Approved  
for Engineering  
DSCC Chair
4. 10/01/21 1:46 pm  
Marita Tibbetts  
(tibbettsmg):  
Approved for  
Pending CCC  
Agenda post
5. 10/19/21 9:12 am  
Marita Tibbetts  
(tibbettsmg):  
Approved for CCC  
Meeting Agenda
6. 10/19/21 9:30 am  
Stephen Raper

(sraper): Approved  
for Campus  
Curricula  
Committee Chair

## History

1. Jul 1, 2020 by  
Sharon Lauck  
(laucks)

The graduate certificate in Natural and Geologic Hazards is designed to provide graduate students with formalized education in the area of geologic hazards assessment and engineering.

The Geologic Hazards Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in Geology, Geophysics, Geological Engineering, Geotechnics, or Civil Engineering or who are currently accepted into a graduate degree program in one of these fields at Missouri S&T. Once admitted to the program, the student must take the four designated courses (provided in the curriculum section). In order 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 Geologic Hazards 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 their choice of non-thesis M.S. degree programs in either Geological Engineering or Geotechnics. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master's degree. Students who do not have all of the prerequisite courses necessary to begin the courses in the Geologic Hazards Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

Required Course:		
<a href="#">GEO ENG 5441</a>	Engineering Geology And Geotechnics	3
One of the following courses are required:		
<a href="#">GEO ENG 6441</a>	Geotechnical Construction Practice	3
<a href="#">GEO ENG 6625</a>	Applications in Geological Engineering	3
Two of the following courses are required:		
<a href="#">GEO ENG 5144</a>	Remote Sensing Technology	3
<a href="#">GEO ENG 5146</a>	Applications Of Geographic Information Systems	3
<a href="#">CIV ENG 5337</a>	River Mechanics And Sediment Transport	3
<a href="#">GEO ENG 5471</a>	Rock Engineering	3
<a href="#">CIV ENG 5716</a>	Geotechnical Earthquake Engineering	3
<a href="#">GEO ENG 5782</a>	Environmental and Engineering Geophysics	3
or <a href="#">GEO ENG 6784</a>	Advanced Engineering And Environmental Geophysics	
or <a href="#">GEO ENG 5761</a>	Transportation Applications of Geophysics	
<a href="#">GEO ENG 6146</a>	Advanced Remote Sensing And Image Processing	3
<a href="#">CIV ENG 6205</a>	Structural Dynamics and Earthquake Engineering	3
<a href="#">GEO ENG 6477</a>	Discontinuous Rock	3

## Justification for request

Geo Eng 5782, 6784, and 5761 have some similar content, and any one of these satisfies this elective.

## Supporting Documents

~~[Approval Ltrs Grad CT in Geologic Hazards.pdf](#)~~

~~[MDHE Approvals DEC 2019.pdf](#)~~

## Course Reviewer Comments

**tibbettsmg (09/15/21 2:04 pm):** updated eff term to FS 22. mt

Key: 350

# Course Change Request

## New Experimental Course Proposal

Date Submitted: 09/16/21 9:24 pm

Viewing: **EXP ENG 6001.006 : Simulation of Explosive Detonation and Energetic Events**

File: 4826

Last edit: 09/17/21 8:25 am

Changes proposed by: johnsoncath

Requested	Spring 2022
Effective Change Date	
Department	Mining & Nuclear Engineering
Discipline	Explosives Engineering (EXP ENG)
Course Number	6001
Topic ID	006
Experimental Title	Simulation of Explosive Detonation and Energetic Events
Experimental Abbreviated Course Title	Explosives Simulation
Instructors	Catherine Johnson

Experimental Catalog Description

### In Workflow

1. **MINEXP ENG 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
9. Peoplesoft

### Approval Path

1. 09/17/21 8:15 am  
Kwame Awuah-Offei (kwamea):  
Approved for MINEXP ENG Chair
2. 09/17/21 8:26 am  
Marita Tibbetts (tibbettsmg):  
Approved for CCC Secretary
3. 10/01/21 1:32 pm  
Stephen Raper

(sraper):

Approved for  
Engineering DSCC  
Chair

4. 10/01/21 1:45 pm

Marita Tibbetts

(tibbettsmg):

Approved for  
Pending CCC  
Agenda post

5. 10/19/21 9:13 am

Marita Tibbetts

(tibbettsmg):

Approved for CCC  
Meeting Agenda

6. 10/19/21 9:30 am

Stephen Raper

(sraper):

Approved for  
Campus Curricula  
Committee Chair

Hydrocode development for energetic events and detonation. Processes include: finite and discrete element analysis model setup and solution; Eulerian, Lagrangian, and smooth particle hydrodynamics referencing systems; material model selection, geometry importation, meshing and boundaries; 2D axial vs planar symmetry and 3D coordinate systems with remapping.

#### Prerequisites

Exp Eng 5112; preceded or accompanied by Exp Eng 6212.

#### Field Trip

#### Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Justification for  
new course:

Request from industry and national laboratories.

Semester(s)  
previously taught

Course never taught. Nothing similar in the program.

Co-Listed  
Courses:

Course Reviewer

Comments

**tibbettsmg (09/17/21 8:25 am):** updated prereq formatting. mt

Key: 4826

[Preview Bridge](#)