



Minutes of the Campus Curricula Committee Meeting

January 9, 2019

9:00am, Bertelsmeyer 110H

(For Faculty Senate Meeting of January 24, 2019)

Attendees: Steve Raper, Petra Dewitt, Thomas Schuman, Barry Flachsbart, Katie Shannon, Kyle Perry, Kristy Giacomelli, and Brittany Parnell

The following curriculum forms were discussed and approved:

Course Change Forms:

File: 4279.17	CHEM ENG 3111: Numerical Computing in Chemical and Biochemical Engineering
File: 4285.14	CHEM ENG 4091: Chemical Process Design I
File: 862.18	CHEM ENG 4097: Chemical Process Design II
File: 4284.8	CHEM ENG 4201: Biochemical Separations and Control Laboratory
File: 52.1	CHEM ENG 4300: Patent Law
File: 1629.1	CIV ENG 5156: Pavement Design
File: 649.2	COMP ENG 2210: Introduction to Digital Logic
File: 2.1	EDUC 1040: Perspectives In Education
File: 2494.7	EDUC 3203: Introduction to STEM Education
File 1758.5	EDUC 3216: Teaching Reading in Content Area
File: 4517.6	EDUC 3220: Teaching Science in the Elementary Classroom
File: 2541.8	EDUC 3221: Teaching Math in Elementary and Middle Schools
File: 176.1	EDUC 3280: Teaching Methods and Skills in the Content Areas
File: 1839.1	EDUC 3340: Current Issues in Educ: Performance Based Assessment, Intermediate
File: 4519.4	EDUC 3430: Literature for Children
File: 4518.3	EDUC 3530: Integrated Social Studies and Humanities for the Elementary Classroom
File: 1558.1	ELEC ENG 5810: Computational Intelligence
File: 826.1	IS&T 1750: Introduction to Management Information Systems
File: 2225.13	IS&T 3333: Data Networks and Information Security
File: 4407.13	IS&T 5520: Data Science and Machine Learning with Python
File: 1561.1	IS&T 5887: Human-Computer Interaction Evaluation
File: 1596.6	MET ENG 5150: Introduction to Metal Additive Manufacturing
File: 4583	POL SCI 4500: Geopolitics and International Security

Degree Change Forms:

File: 150.65	CH ENG-BS: Chemical Engineering BS
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Experimental Course Forms:

File: 4582 ELEC ENG 5001.007: Process Control System Safety, Security and Alarms
File: 4584 HISTORY 3001.007: World History

The following forms have been retracted:

File: 153.60 CP ENG-BS: Computer Engineering BS
File: 155.47 EL ENG-BS: Electrical Engineering BS

The Campus Curricula Committee recommends to the Faculty Senate, the adoption of the proposed undergraduate and graduate certificates' policies and procedures as an addendum to the Minor Creation Policy.

The committee tabled "*Admission to a discipline or department*" as an appropriate course prerequisite, for further discussion.

The remaining Spring 2019 Curricula meeting dates were discussed and approved.

The meeting adjourned at 9:55am.



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

Course Change Request

Date Submitted: 12/06/18 2:55 pm

Viewing: **CHEM ENG 3111 : Numerical Computing in Chemical and Biochemical Engineering**

File: 4279.17

Last approved: 03/06/17 3:15 am

Last edit: 01/09/19 1:53 pm

Changes proposed by: jcwang

Programs

referencing this

course

[CH ENG-BS: Chemical Engineering BS](#)

Other Courses

referencing this

course

In The Prerequisites:

[CHEM ENG 3131 : Separations in Chemical and Biochemical Engineering](#)

[CHEM ENG 3150 : Chemical Engineering Reactor Design](#)

Requested **Fall 2019** ~~08/14/2017~~

Effective Change

Date

Department Chemical and Biochemical Engineering

Discipline Chemical Engineering (CHEM ENG)

Course Number 3111

Title

In Workflow

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

Approval Path

1. 12/11/18 6:04 pm
Muthanna Al-Dahhan
(aldahhanm):
Approved for
RCHEMENG Chair
2. 12/12/18 9:51 am
Brittany Parnell
(ershenb):

Numerical Computing in Chemical and Biochemical Engineering

Abbreviated Course Title Numerical Computing

Catalog
Description

Approved for CCC
Secretary

3. 12/17/18 12:16
pm

Stephen Raper
(sraper):
Approved for
Engineering DSCC
Chair

4. 12/17/18 1:18 pm
Brittany Parnell
(ershenb):

Approved for
Pending CCC
Agenda post

5. 01/09/19 1:54 pm
Brittany Parnell
(ershenb):

Approved for CCC
Meeting Agenda

6. 01/10/19 9:11 am
Stephen Raper
(sraper):

Approved for
Campus Curricula
Committee Chair

History

1. Jan 24, 2017 by Daniel Forciniti (forciniti)
2. Mar 6, 2017 by kristyg (4279.14)

~~The students are introduced to the concepts of engineering problem formulation, model building, and multi-scale models. Students will add Matlab, spreadsheet and polymath computing are used to their programming skills by exploring numerical computational techniques for solving and analyzing solve chemical engineering problems involving systems of linear and non-linear algebraic and calculus-based equations equations, and systems of equations that describe chemical engineering processes. ordinary and partial differential equations.~~

Prerequisites

Math 3304 and either both Comp Sci ~~1570 1971~~ and Comp Sci ~~1580, 1981~~ or both Comp Sci ~~1971 1972~~ and Comp Sci ~~1981, or both Comp Sci 1972 and Comp Sci 1982.~~
~~Admitted to the Chemical Engineering Program.~~

Field Trip

Statement

Credit Hours	LEC: 2	LAB: 1	IND: 0	RSD: 0
Total: 3				
Required for Majors	Yes			
Elective for Majors	No			

Justification for change:

ChE 3111 is a new course in the new chemical engineering curriculum. Its catalog description is updated based on the instructor's input and suggestion. Its prerequisite is also expanded to include Comp Sci 1570 and Comp Sci 1580 as these two courses have been accepted as equivalent to the other Comp Sci courses by the ChE department in recent years.

Semesters previously offered as an experimental course

Co-Listed

Courses:

Course Reviewer

Comments

sraper (12/17/18 12:16 pm): We need to discuss Prereq statement at the CCC meeting that this is discussed. Will bring feedback from Eng DSCC.

ershenb (01/09/19 1:53 pm): removed "Admitted to the Chemical Engineering Program."

Key: 4279

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/06/18 12:57 pm

Viewing: **CHEM ENG 4091 : Chemical Process Design I**

File: 4285.14

Last approved: 03/06/17 3:15 am

Last edit: 12/06/18 12:57 pm

Changes proposed by: jcwang

Programs

referencing this
course

[CH ENG-BS: Chemical Engineering BS](#)

Other Courses

referencing this
course

In The Prerequisites:

[CHEM ENG 4097 : Chemical Process Design II](#)

Requested	Fall 2019 08/14/2017
Effective Change Date	
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4091
Title	Chemical Process Design I

In Workflow

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

Approval Path

1. 12/11/18 6:04 pm
Muthanna Al-Dahhan
(aldahhanm):
Approved for
RCHEMENG Chair
2. 12/12/18 9:51 am
Brittany Parnell
(ershenb):

Abbreviated
Course Title

Chem Process Design I

Catalog
Description

Approved for CCC
Secretary

3. 12/17/18 12:15
pm

Stephen Raper
(sraper):

Approved for
Engineering DSCC
Chair

4. 12/17/18 1:18 pm

Brittany Parnell
(ershenb):

Approved for
Pending CCC
Agenda post

5. 01/09/19 2:09 pm

Brittany Parnell
(ershenb):

Approved for CCC
Meeting Agenda

6. 01/10/19 9:11 am

Stephen Raper
(sraper):

Approved for
Campus Curricula
Committee Chair

History

1. Jan 10, 2017 by
Daniel Forciniti
(forcinit)

2. Mar 6, 2017 by
kristyg (4285.12)

Economic analysis of a chemical process including capital requirements, operating costs, earnings, and profits. The economic balance is applied to chemical engineering operations and processes. Optimization and scheduling techniques are applied to process evaluation. Preliminary process design and use of simulation software.

Prerequisites

~~Either (Chem Eng 3150,~~ Chem Eng 3131 and Chem Eng **3141; 3141)** ~~or (Chem Eng 3150 and~~ preceded or accompanied by **either Chem Eng 3150 or Chem Eng 5250.** ~~5250).~~

Field Trip

Statement

Credit Hours	LEC: 1	LAB: 2	IND: 0	RSD: 0
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Total: 3

Required for	Yes
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Majors

Elective for	No
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Majors

Justification for
change:

To update the chain of prerequisites for the new chemical engineering curriculum that will be fully implemented in Fall 2019.

Semesters
previously
offered as an
experimental
course

Co-Listed

Courses:

Course Reviewer

Comments

Course Change Request

Date Submitted: 12/06/18 12:56 pm

Viewing: **CHEM ENG 4097 : Chemical Process Design II**

File: 862.18

Last approved: 03/06/17 3:15 am

Last edit: 12/06/18 12:56 pm

Changes proposed by: jcwang

Programs
referencing this
course

[CH ENG-BS: Chemical Engineering BS](#)

Requested	Fall 2019 08/14/2017
Effective Change Date	
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4097
Title	Chemical Process Design II
Abbreviated Course Title	Chem Process Design II

Catalog
Description

In Workflow

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

Approval Path

1. 12/11/18 6:04 pm
Muthanna Al-Dahhan
(aldahhanm):
Approved for
RCHEMENG Chair
2. 12/12/18 9:51 am
Brittany Parnell
(ershenb):

Approved for CCC
Secretary

3. 12/17/18 12:17
pm

Stephen Raper
(sraper):

Approved for
Engineering DSCC
Chair

4. 12/17/18 1:18 pm

Brittany Parnell
(ershenb):

Approved for
Pending CCC
Agenda post

5. 01/09/19 2:10 pm

Brittany Parnell
(ershenb):

Approved for CCC
Meeting Agenda

6. 01/10/19 9:11 am

Stephen Raper
(sraper):

Approved for
Campus Curricula
Committee Chair

History

1. May 4, 2015 by luksc (862.1)
2. Mar 6, 2017 by forcinit (862.4)

Engineering principles involved in the design and layout of chemical process equipment. Material and energy balances, equipment selection and design, and

preconstruction cost estimation are performed for a capstone design project.
Communication emphasized course.

Prerequisites

Chem Eng **3150** ~~3130~~ and Chem Eng **4091**; ~~3150~~; preceded or accompanied by ~~either~~
Chem Eng **4110**. ~~4091 or both Chem Eng 4110 and Chem Eng 4096.~~

Field Trip

Statement

Credit Hours	LEC: 1	LAB: 2	IND: 0	RSD: 0
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Total: 3

Required for	Yes
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Majors

Elective for	No
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Majors

Justification for

change:

To remove prerequisite courses existing in the old chemical engineering curriculum which will be completely phased out in Spring 2019, and to update the chain of prerequisites for the new chemical engineering curriculum.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer

Comments

Course Change Request

Date Submitted: 12/06/18 2:51 am

Viewing: **CHEM ENG 4201 : Biochemical Separations and Control Laboratory**

File: 4284.8

Last approved: 05/24/16 4:57 am

Last edit: 12/06/18 2:51 am

Changes proposed by: jcwang

Programs
referencing this
course

[CH ENG-BS: Chemical Engineering BS](#)

Requested	Fall 2019 08/14/2018
Effective Change Date	
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4201
Title	Biochemical Separations and Control Laboratory
Abbreviated Course Title	Biochemical Separations

Catalog
Description

In Workflow

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

Approval Path

1. 12/11/18 6:04 pm
Muthanna Al-Dahhan
(aldahhanm):
Approved for
RCHEMENG Chair
2. 12/12/18 9:52 am
Brittany Parnell
(ershenb):

Approved for CCC
Secretary

3. 12/17/18 12:15
pm

Stephen Raper
(sraper):

Approved for
Engineering DSCC
Chair

4. 12/17/18 1:18 pm

Brittany Parnell
(ershenb):

Approved for
Pending CCC
Agenda post

5. 01/09/19 2:10 pm

Brittany Parnell
(ershenb):

Approved for CCC
Meeting Agenda

6. 01/10/19 9:11 am

Stephen Raper
(sraper):

Approved for
Campus Curricula
Committee Chair

History

1. May 24, 2016 by
Daniel Forciniti
(forcinit)

Introduction to the unit operations employed in the separation of chemicals and biochemicals. The experiments illustrate the staged and continuous separation

systems that are involved. Application of concepts of industrial process dynamics and control. Communications emphasized.

Prerequisites

Preceded or accompanied by Chem Eng 5250.

Field Trip

Statement

Credit Hours	LEC: 1	LAB: 2	IND: 0	RSD: 0
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Total: 3

Required for	Yes
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Majors

Elective for	No
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Majors

Justification for
change:

Chem Eng 5250 is changed from a prerequisite to a co-requisite based on the instructor's and the students' experiences for improving the teaching and learning effectiveness. This change will also potentially help reduce the students' time to graduate.

Semesters
previously
offered as an
experimental
course

Co-Listed

Courses:

Course Reviewer

Comments

Course Change Request

Date Submitted: 10/31/18 12:07 pm

Viewing: **CHEM ENG 4300 : Patent Law**

File: 52.1

Last edit: 11/21/18 9:57 am

Changes proposed by: ershenb

Other Courses
referencing this
course

In The Catalog Description:

[ENG MGT 5514 : Patent Law](#)

Requested	Summer 2019 08/01/2014
Effective Change Date	
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4300
Title	Patent Law
Abbreviated Course Title	Patent Law

Catalog
Description

In Workflow

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

Approval Path

1. 10/30/18 2:14 am
Muthanna Al-
Dahhan
(aldahhanm):
Approved for
RCHEMENG Chair
2. 10/30/18 8:38 am
Brittany Parnell

- (ershenb):
Approved for CCC
Secretary
3. 10/31/18 11:41
am
Brittany Parnell
(ershenb):
Rollback to
Initiator
4. 11/15/18 4:37 am
Muthanna Al-
Dahhan
(aldahhanm):
Approved for
RCHEMENG Chair
5. 11/15/18 7:53 am
Suzanna Long
(longsuz):
Approved for
RENGMNGT Chair
6. 11/15/18 10:20
am
Brittany Parnell
(ershenb):
Approved for CCC
Secretary
7. 11/21/18 9:51 am
Stephen Raper
(sraper):
Approved for
Engineering DSCC
Chair
8. 12/17/18 10:24
am
Brittany Parnell
(ershenb):

Approved for
Pending CCC
Agenda post
9. 01/09/19 2:10 pm
Brittany Parnell
(ershenb):
Approved for CCC
Meeting Agenda
10. 01/10/19 9:11 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee Chair

A presentation of the relationship between patent law and technology for students involved with developing and protecting new technology or pursuing a career in patent law. Course includes an intense study of patentability and preparation and prosecution of patent applications.

Prerequisites

Senior or graduate standing.

Field Trip

Statement

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

Required for Majors	No
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Elective for Majors	No
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Justification for
change:

This course form will serve two purposes due to a CourseLeaf technicality:

1. This form is being submitted as a course change form to remove the co-list ENG MGT 5514 Patent Law which will remain an active course (per Steve Raper).

2. Per the justification below (Jee-Ching Wang), this form will also serve as a proposal to deactivate CHEM ENG 4300 Patent Law.

This course has been stopped by the ChE department being accepted as a ChE Tech. Elect. courses many years ago, but somehow still remains in the list of ChE courses. ChE faculty and students have suggested to remove it in order to avoid possible confusion.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

~~ENG MGT 5514~~ - Patent Law

Course Reviewer

Comments

ershenb (10/31/18 11:41 am): Rollback: Rollback per email with Dr. Raper. The co-list ENG MGT 5514 needs to remain an active course.

ershenb (10/31/18 12:09 pm): removed the ENG MGT 5514 co-list

Key: 52

[Preview Bridge](#)

Course Change Request

Date Submitted: 09/18/18 11:01 pm

Viewing: **CIV ENG 5156 : ~~Concrete-Pavement Design~~**

File: 1629.1

Last edit: 11/16/18 10:24 am

Changes proposed by: liujuan

Programs referencing this course

[ARC ENG-BS: Architectural Engineering BS](#)

Requested **Fall 2019** ~~08/14/2018~~
 Effective Change Date

Department Civil, Architectural, and Environmental Engineering

Discipline Civil Engineering (CIV ENG)

Course Number 5156

Title ~~Concrete~~-Pavement Design

Abbreviated Course Title ~~Concrete~~-Pavement Design

Catalog Description

In Workflow

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

Approval Path

1. 11/15/18 11:09 am
Joel Burken (burken):
Approved for RCIVILEN Chair
2. 11/15/18 3:16 pm
Brittany Parnell (ershenb):

Approved for CCC
Secretary

3. 11/21/18 9:51 am
Stephen Raper

(sraper):

Approved for
Engineering DSCC
Chair

4. 12/17/18 10:24
am

Brittany Parnell
(ershenb):

Approved for
Pending CCC
Agenda post

5. 01/09/19 2:12 pm
Brittany Parnell

(ershenb):

Approved for CCC
Meeting Agenda

6. 01/10/19 9:11 am
Stephen Raper

(sraper):

Approved for
Campus Curricula
Committee Chair

Principles ~~Design~~ of **flexible and rigid pavement design** ~~rigid pavements~~ including ~~loading characteristics, properties of pavement components,~~ stress **analysis, load and environmental** ~~distribution, and the~~ effects **and material characteristics;** **Introduction to AASHTO, PCA, AI, FAA, MEPDG, and other design methods; design of overlays and drainage system; pavement performance evaluation and rehabilitation techniques.** ~~of climatic variables on design criteria.~~

Prerequisites

Civ Eng 3116 with a grade of "C" or better.

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:

There are overlaps in concrete and asphalt pavement designs such as loading characteristics (traffic consideration), climatic variables, properties of other pavement components (layers beneath), etc. It will be more beneficial to provide senior undergraduate and graduate students an overview of pavement system and fundamentals of pavement design through one course.

Semesters
previously
offered as an
experimental
course

N/A

Co-Listed
Courses:

Course Reviewer Comments

sraper (11/16/18 10:24 am): checked elective for majors.

Key: 1629

[Preview Bridge](#)

Course Change Request

Date Submitted: 11/29/18 9:25 am

Viewing: **COMP ENG 2210 : Introduction to Digital Logic**

File: 649.2

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

Last edit: 01/09/19 2:16 pm

Changes proposed by: ershenb

Programs

referencing this

course

[ARC ENG-BS: Architectural Engineering BS](#)

[CP ENG-BS: Computer Engineering BS](#)

[EL ENG-BS: Electrical Engineering BS](#)

[CMP SC-BS: Computer Science BS](#)

Other Courses

referencing this

course

In The Prerequisites:

[COMP ENG 2211 : Computer Engineering Laboratory](#)

[COMP ENG 3110 : Computer Organization and Design](#)

[COMP ENG 3150 : Introduction to Microcontrollers and Embedded System Design](#)

[COMP ENG 3151 : Digital Engineering Lab II](#)

[COMP ENG 4096 : Computer Engineering Senior Project I](#)

[COMP ENG 5210 : Introduction To VLSI Design](#)

[COMP ENG 5220 : Digital System Modeling](#)

[COMP ENG 5230 : Optical Computing](#)

[COMP ENG 5510 : Fault-Tolerant Digital Systems](#)

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. 11/29/18 12:11 pm
Daryl Beetner (daryl): Approved for RELECENG Chair
2. 11/30/18 2:45 pm
Brittany Parnell (ershenb):

- [COMP ENG 5803 : Mathematical Logic I](#)
- [COMP ENG 6210 : Digital Logic](#)
- [COMP SCI 3803 : Computer Organization](#)
- [COMP SCI 5203 : Mathematical Logic I](#)
- [ELEC ENG 3100 : Electronics I](#)
- [ELEC ENG 3101 : Electronics I Laboratory](#)
- [ELEC ENG 4096 : Electrical Engineering Senior Project I](#)
- [ELEC ENG 5250 : Optical Computing](#)
- [MATH 5154 : Mathematical Logic I](#)
- [PHILOS 3254 : Symbolic Logic in Argumentation](#)
- [PHILOS 4354 : Mathematical Logic I](#)

- Approved for CCC Secretary
- 3. 12/13/18 3:02 pm
Stephen Raper (sraper):
Approved for Engineering DSCC Chair
- 4. 12/17/18 10:24 am
Brittany Parnell (ershenb):
Approved for Pending CCC Agenda post
- 5. 01/09/19 2:16 pm
Brittany Parnell (ershenb):
Approved for CCC Meeting Agenda
- 6. 01/10/19 9:11 am
Stephen Raper (sraper):
Approved for Campus Curricula Committee Chair

Requested **Fall 2019** ~~08/17/2015~~

Effective Change Date

Department Electrical and Computer Engineering

Discipline Computer Engineering (COMP ENG)

Course Number 2210

Title Introduction to Digital Logic

Abbreviated Intro to Digital Logic

Course Title

Catalog Description

Examines the core components from which digital systems are designed, constructed, and analyzed. Topics include binary numbers, truth tables, Boolean algebra, Karnaugh maps, combinational logic, digital components, CMOS,

History

- 1. Feb 9, 2015 by stanleyj (649.1)

programmable logic devices, and sequential circuits. ~~Binary arithmetic, Boolean algebra, logic and memory elements, computer organization.~~

Prerequisites

~~Sophomore standing.~~ **Accompanied by** Comp Eng **2211.** ~~2211 is also a co-requisite for Comp Eng and Elec Eng majors.~~

Field Trip

Statement

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

Justification for change:

The current course description does not adequately present the topics covered in Comp Eng 2210. A large number of out-of-department students take Comp Eng 2210. The updated course description provides more details for faculty, Missouri S&T students, transfer students, and prospective students for the required topics covered in this core course. The sophomore standing requirement is being waived because there is no fundamental computer engineering background necessary for this course. The sophomore standing prerequisite has been waived for numerous students.

The Comp Eng faculty unanimously approved the course description change on November 15, 2018.

Semesters
previously
offered as an
experimental
course

Co-Listed

Courses:

Course Reviewer

Comments

ershenb (11/29/18 9:27 am): Submitted the proposed changes per the request of Dr. Stanley (CourseLeaf technical difficulties).

ershenb (01/09/19 2:16 pm): Changed the prerequisite to "Accompanied by Comp Eng 2211."

Key: 649

[Preview Bridge](#)

Course Change Request

Date Submitted: 11/30/18 12:22 pm

Viewing: **EDUC 1040 : Perspectives In Education**

File: 2.1

Last edit: 12/07/18 3:49 pm

Changes proposed by: carterke

Catalog Pages

referencing this
course

[Teacher Education and Certification](#)

Programs

referencing this
course

[BUS&MS-BS: Business and Mgmt Systems BS](#)

Other Courses

referencing this
course

In The Prerequisites:

[ART 3219 : Art For Elementary Teachers](#)

[EDUC 1104 : Teacher Field Experience](#)

[EDUC 1164 : Aiding Elementary, Middle And Secondary Schools](#)

[EDUC 1174 : School Organization & Adm For Elementary & Secondary Teachers](#)

[EDUC 2219 : Art For Elementary Teachers](#)

[EDUC 2251 : Historical Foundation Of American Education](#)

[EDUC 3211 : Child Psychology](#)

[EDUC 3215 : Teaching of Reading in Elementary and Middle School](#)

In Workflow

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

Approval Path

1. 12/06/18 3:33 pm
Audra Merfeld-Langston
(audram):
Approved for
RPHILOSO Chair
2. 12/10/18 4:09 pm
Kelly Carter

[EDUC 3218 : Language Arts for Elementary Teachers](#)

[EDUC 3280 : Teaching Methods And Skills In The Content Areas](#)

[EDUC 3290 : Coordination of Cooperative Education](#)

Requested **Fall 2019** ~~08/01/2014~~

Effective Change

Date

Department **Teacher Education and Certification** ~~Arts, Languages, & Philosophy~~

Discipline Education (EDUC)

Course Number 1040

Title

Perspectives In Education

Abbreviated Perspectives In Educ

Course Title

Catalog

Description

(carterke):

Approved for
REDUCATION
Chair

3. 12/11/18 11:16
am

Brittany Parnell
(ershenb):

Approved for CCC
Secretary

4. 12/14/18 3:10 pm
Barry Flachsbart

(barryf):
Approved for

Social Sciences
DSCC Chair

5. 12/17/18 10:24
am

Brittany Parnell
(ershenb):

Approved for
Pending CCC
Agenda post

6. 01/09/19 2:17 pm
Brittany Parnell

(ershenb):
Approved for CCC

Meeting Agenda

7. 01/10/19 9:11 am
Stephen Raper

(sraper):
Approved for

Campus Curricula
Committee Chair

This course is an introduction course which will assist students planning to enter the teacher-education program in assessing their personal and professional characteristics required for the teaching profession. It is an overview of the teacher education profession for elementary, middle and secondary.

Prerequisites

Education emphasis declared.

Field Trip

Statement

Credit Hours	LEC: 2	LAB: 0	IND: 0	RSD: 0
--------------	--------	--------	--------	--------

Total: 2

Required for	No
--------------	----

Majors

Elective for	No
--------------	----

Majors

Justification for
change:

This course is specifically geared to those that intend to teach.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer

Comments

Course Change Request

Date Submitted: 12/06/18 3:21 pm

Viewing: **EDUC 3203 : Introduction to STEM Education**

File: 2494.7

Last approved: 03/26/18 3:33 am

Last edit: 01/09/19 2:28 pm

Changes proposed by: carterke

Requested	Fall 2019 08/14/2018
Effective Change Date	
Department	Teacher Education and Certification Arts, Languages, & Philosophy
Discipline	Education (EDUC)
Course Number	3203
Title	Introduction to STEM Education
Abbreviated Course Title	Intro to STEM Education

Catalog Description

In Workflow

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

Approval Path

1. 12/06/18 3:33 pm
Audra Merfeld-Langston (audram):
Approved for RPHILOSO Chair
2. 12/10/18 4:10 pm
Kelly Carter

(carterke):

Approved for
REDUCATION
Chair

3. 12/11/18 11:20
am

Brittany Parnell

(ershenb):

Approved for CCC
Secretary

4. 12/14/18 3:10 pm

Barry Flachsbart

(barryf):

Approved for
Social Sciences
DSCC Chair

5. 12/17/18 10:24
am

Brittany Parnell

(ershenb):

Approved for
Pending CCC
Agenda post

6. 01/09/19 2:28 pm

Brittany Parnell

(ershenb):

Approved for CCC
Meeting Agenda

7. 01/10/19 9:11 am

Stephen Raper

(sraper):

Approved for
Campus Curricula
Committee Chair

History

1. Mar 6, 2017 by dewittp (2494.1)
2. Mar 26, 2018 by schwartzem (2494.2)

A study of current methodologies for teaching in area of specialization. Students are introduced to a variety of instructional programs including Project Lead the Way.

Prerequisites

Educ 3220.

Field Trip

Statement

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

Total: 3

Required for	No Yes
--------------	--------------------------

Majors

Elective for	No
--------------	----

Majors

Justification for
change:

Much of the material from 3220 is applied in 3203.

Semesters
previously
offered as an
experimental
course

Co-Listed

Courses:

Course Reviewer

Comments

ershenb (01/09/19 2:28 pm): Unchecked "No" for "required for majors."

Key: 2494

[Preview Bridge](#)

Course Change Request

Date Submitted: 11/30/18 12:28 pm

Viewing: **EDUC 3216 : Teaching Reading in Content Area**

File: 1758.5

Last approved: 10/31/16 3:10 am

Last edit: 01/09/19 2:54 pm

Changes proposed by: carterke

Catalog Pages

referencing this
course

[Teacher Education and Certification](#)

Programs

referencing this
course

[BUS&MS-BS: Business and Mgmt Systems BS](#)

Requested **Fall 2019** ~~08/14/2018~~

Effective Change

Date

Department **Teacher Education and Certification** ~~Arts, Languages, & Philosophy~~

Discipline Education (EDUC)

Course Number 3216

Title

Teaching Reading in Content Area

In Workflow

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

Approval Path

1. 12/06/18 3:34 pm
Audra Merfeld-Langston (audram):
Approved for RPHILOSO Chair
2. 12/10/18 4:10 pm
Kelly Carter

Abbreviated
Course Title

Teach Read in Cont Area

Catalog
Description

(carterke):
Approved for
REDUCATION
Chair

3. 12/11/18 11:56
am

Brittany Parnell
(ershenb):
Approved for CCC
Secretary

4. 12/14/18 3:10 pm

Barry Flachsbart
(barryf):

Approved for
Social Sciences
DSCC Chair

5. 12/17/18 10:24
am

Brittany Parnell
(ershenb):

Approved for
Pending CCC
Agenda post

6. 01/09/19 2:54 pm

Brittany Parnell
(ershenb):

Approved for CCC
Meeting Agenda

7. 01/10/19 9:11 am

Stephen Raper
(sraper):

Approved for
Campus Curricula
Committee Chair

History

1. Oct 31, 2016 by
dewittp (1758.1)

For elementary, middle and secondary school teachers. Specific ways teachers can help students improve reading skills in content areas and ways reading can be taught in reading classes.

Prerequisites

Educ 1040.

Field Trip

Statement

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

Total: 3

Required for	No
--------------	----

Majors

Elective for	No Yes
--------------	--------------------------

Majors

Justification for
change:

This course is specific to teaching and learning strategies to assist with reading comprehension using content area resources. Having taken 1040, students have the background knowledge necessary and are committed to becoming a teacher.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer

Comments

ershenb (01/09/19 2:54 pm): unchecked (no) elective for majors

Key: 1758

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/06/18 3:22 pm

Viewing: **EDUC 3220 : Teaching Science in the Elementary Classroom**

File: 4517.6

Last approved: 07/03/18 3:40 am

Last edit: 01/09/19 2:55 pm

Changes proposed by: carterke

Requested **Fall 2019** ~~08/14/2018~~

Effective Change

Date

Department **Teacher Education and Certification** ~~Arts, Languages, & Philosophy~~

Discipline Education (EDUC)

Course Number 3220

Title

Teaching Science in the Elementary Classroom

Abbreviated Teaching Science

Course Title

Catalog

Description

In Workflow

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

Approval Path

1. 12/06/18 3:34 pm
Audra Merfeld-Langston
(audram):
Approved for
RPHILOSO Chair
2. 12/10/18 4:10 pm
Kelly Carter

(carterke):

Approved for
REDUCATION
Chair

3. 12/11/18 12:00
pm

Brittany Parnell

(ershenb):

Approved for CCC
Secretary

4. 12/14/18 3:10 pm

Barry Flachsbart

(barryf):

Approved for
Social Sciences
DSCC Chair

5. 12/17/18 10:24
am

Brittany Parnell

(ershenb):

Approved for
Pending CCC
Agenda post

6. 01/09/19 2:56 pm

Brittany Parnell

(ershenb):

Approved for CCC
Meeting Agenda

7. 01/10/19 9:11 am

Stephen Raper

(sraper):

Approved for
Campus Curricula
Committee Chair

History

1. Jul 3, 2018 by
Michelle
Schwartz
(schwartzem)

A study in methods and materials for teaching science. This course will cultivate students' understanding of Science, Technology, Engineering and Mathematics (STEM) education with a focus on implications for teaching and learning.

Prerequisites

Educ 1040.

Field Trip

Statement

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

Total: 3

Required for	No Yes
--------------	--------------------------

Majors

Elective for	No
--------------	----

Majors

Justification for

change:

Students need a general understanding of the teaching profession before taking a methods course.

Semesters

previously

offered as an

experimental

course

Fall 2015

Fall 2017

Fall 2015 enrollment- 10

Fall 2017 enrollment- 15

Co-Listed

Courses:

Course Reviewer

Comments

ershenb (01/09/19 2:55 pm): unchecked (no) required for majors

Key: 4517

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/06/18 3:25 pm

Viewing: **EDUC 3221 : Teaching Math in Elementary and Middle Schools**

File: 2541.8

Last approved: 12/14/16 3:14 am

Last edit: 01/09/19 2:57 pm

Changes proposed by: carterke

Requested	Fall 2019 08/14/2018
Effective Change Date	
Department	Teacher Education and Certification Arts, Languages, & Philosophy
Discipline	Education (EDUC)
Course Number	3221
Title	Teaching Math in Elementary and Middle Schools
Abbreviated Course Title	Tch Math Elem & Mid Sch

Catalog Description

In Workflow

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

Approval Path

1. 12/06/18 3:34 pm
Audra Merfeld-Langston (audram):
Approved for RPHILOSO Chair
2. 12/10/18 4:10 pm
Kelly Carter

(carterke):

Approved for
REDUCATION
Chair

3. 12/11/18 12:15
pm

Brittany Parnell

(ershenb):

Approved for CCC
Secretary

4. 12/14/18 3:10 pm

Barry Flachsbart

(barryf):

Approved for
Social Sciences
DSCC Chair

5. 12/17/18 10:24

am

Brittany Parnell

(ershenb):

Approved for
Pending CCC
Agenda post

6. 01/09/19 2:57 pm

Brittany Parnell

(ershenb):

Approved for CCC
Meeting Agenda

7. 01/10/19 9:11 am

Stephen Raper

(sraper):

Approved for
Campus Curricula
Committee Chair

History

1. May 6, 2016 by
welchms (2541.1)
2. Dec 14, 2016 by
dewittp (2541.5)

The course presents an overview of how children learn mathematics, various techniques in teaching mathematics, and examples of applying these techniques to specific mathematical concepts (such as geometry, measurement, basic operations, statistics and probability, etc.).

Prerequisites

Math 1120 or Math **1140**; **Educ 1040**. ~~1140~~

Field Trip

Statement

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

Total: 3

Required for	No
--------------	----

Majors

Elective for	No Yes
--------------	--------------------------

Majors

Justification for
change:

As a methods course, students need background knowledge in education before attempting this course.

Semesters
previously
offered as an
experimental
course

Co-Listed

Courses:

MATH 3921 - Teaching Math in Elementary and Middle Schools

Course Reviewer

Comments

ershenb (01/09/19 2:57 pm): unchecked (no) elective for majors

Key: 2541

[Preview Bridge](#)

Course Change Request

Date Submitted: 11/30/18 4:30 pm

Viewing: **EDUC 3280 : Teaching Methods and And Skills in In-The-Content Areas**

File: 176.1

Last edit: 01/10/19 9:52 am

Changes proposed by: carterke

Catalog Pages
referencing this
course

[Teacher Education and Certification](#)

Programs
referencing this
course

[BUS&MS-BS: Business and Mgmt Systems BS](#)

Requested **Fall 2019** ~~08/14/2018~~

Effective Change
Date

Department **Teacher Education and Certification** ~~Arts,
Languages, & Philosophy~~

Discipline Education (EDUC)

Course Number 3280

Title
Teaching Methods **and And** Skills **in In-The** Content Areas

Abbreviated Tchg **Mth Meth** Content Areas
Course Title

In Workflow

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

Approval Path

1. 12/06/18 3:34 pm
Audra Merfeld-
Langston
(audram):
Approved for
RPHILOSO Chair
2. 12/10/18 4:11 pm
Kelly Carter

Catalog
Description

(carterke):

Approved for
REDUCATION
Chair

3. 12/11/18 12:20
pm

Brittany Parnell
(ershenb):

Approved for CCC
Secretary

4. 12/14/18 3:10 pm

Barry Flachsbart
(barryf):

Approved for
Social Sciences
DSCC Chair

5. 12/17/18 10:24
am

Brittany Parnell
(ershenb):

Approved for
Pending CCC
Agenda post

6. 01/10/19 9:52 am

Brittany Parnell
(ershenb):

Approved for CCC
Meeting Agenda

7. 01/10/19 10:08
am

Stephen Raper
(sraper):

Approved for
Campus Curricula
Committee Chair

Series of weekly experiences, demonstrations, observations, micro teaching, small group discussions to develop concepts of and skills in a variety of basic teaching tasks. Also, demonstration and lecture exercises in the preparation and use of audio visual materials for teaching.

Prerequisites

Educ **3216** ~~1040~~ and **English 3170**. ~~1104~~.

Field Trip

Statement

Credit Hours	LEC: 6	LAB: 0	IND: 0	RSD: 0
--------------	--------	--------	--------	--------

Total: 6

Required for	No
--------------	----

Majors

Elective for	No
--------------	----

Majors

Justification for

change:

3280 is the culminating course in preparation for student teaching. 3216 and 3170 include strategies, methods and skills needed to succeed in 3280.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer

Comments

ershenb (01/10/19 9:52 am): removed "the" from the course title.

Date Submitted: 11/30/18 4:34 pm

Viewing: **EDUC 3340 : Current Issues In Education: ~~Educ:Performance-Based Assessment, Intermediate-Performance Based Assessment, Intermediate~~**

File: 1839.1

Last edit: 01/10/19 9:53 am

Changes proposed by: carterke

Requested **Fall 2019** ~~08/01/2014~~

Effective Change

Date

Department

Teacher Education and Certification ~~Arts, Languages, & Philosophy~~

Discipline

Education (EDUC)

Course Number 3340

Title

In Workflow

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

Approval Path

1. 12/06/18 3:34 pm
Audra Merfeld-Langston
(audram):
Approved for
RPHILOS Chair

2. 12/10/18 4:11 pm
Kelly Carter
(carterke):
Approved for
REDUCATION
Chair
3. 12/11/18 1:12 pm
Brittany Parnell
(ershenb):
Approved for CCC
Secretary
4. 12/14/18 3:10 pm
Barry Flachsbart
(barryf):
Approved for
Social Sciences
DSCC Chair
5. 12/17/18 10:24
am
Brittany Parnell
(ershenb):
Approved for
Pending CCC
Agenda post
6. 01/10/19 9:53 am
Brittany Parnell
(ershenb):
Approved for CCC
Meeting Agenda
7. 01/10/19 10:08
am
Stephen Raper
(sraper):

Approved for
Campus Curricula
Committee Chair

Current Issues In **Education: ~~Educ:Performance Based Assessment,~~
~~Intermediate~~ Performance Based Assessment, Intermediate**

Abbreviated Perform Base Assess Inte

Course Title

Catalog

Description

This course will provide participants with an understanding of performance-based assessments, how to construct performance tasks and how to construct scoring guides.

Prerequisites

Educ 1040.

Field Trip

Statement

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

Total: 3

Required for **Yes ~~No~~**

Majors

Elective for No

Majors

Justification for

change:

This course is a requirement for DESE to become certified. It is geared toward assessing student performance in the classroom, so it is designed for education emphasis students.

Semesters

previously

offered as an

experimental
course

Co-Listed

Courses:

Course Reviewer

Comments

ershenb (01/10/19 9:53 am): Changed "Educ" to "Education" in course title.

Key: 1839

[Preview Bridge](#)

Course Change Request

Date Submitted: 11/30/18 4:36 pm

Viewing: **EDUC 3430 : Literature for Children**

File: 4519.4

Last approved: 03/26/18 3:33 am

Last edit: 01/09/19 3:19 pm

Changes proposed by: carterke

Requested **Fall 2019** ~~08/14/2018~~

Effective Change

Date

Department **Teacher Education and Certification** ~~Arts, Languages, & Philosophy~~

Discipline Education (EDUC)

Course Number 3430

Title

Literature for Children

Abbreviated Literature for Children

Course Title

Catalog

Description

In Workflow

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

Approval Path

1. 12/06/18 3:34 pm
Audra Merfeld-Langston
(audram):
Approved for
RPHILOS Chair
2. 12/10/18 4:12 pm
Kelly Carter

(carterke):

Approved for
REDUCATION
Chair

3. 12/11/18 1:14 pm

Brittany Parnell
(ershenb):
Approved for CCC
Secretary

4. 12/14/18 3:10 pm

Barry Flachsbart
(barryf):
Approved for
Social Sciences
DSCC Chair

5. 12/17/18 10:24
am

Brittany Parnell
(ershenb):
Approved for
Pending CCC
Agenda post

6. 01/09/19 3:21 pm

Brittany Parnell
(ershenb):
Approved for CCC
Meeting Agenda

7. 01/10/19 9:11 am

Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee Chair

History

1. Mar 26, 2018 by
Michelle
Schwartz
(schwartzem)

A study of children's literary works, authors, genres, and illustrators appropriate for the elementary classroom.

Prerequisites

Educ 1040.

Field Trip

Statement

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

Total: 3

Required for Majors	No Yes
------------------------	--------------------------

Elective for Majors	No
------------------------	----

Justification for change:

This course includes pedagogy and methodology or the use of children's literature in the classroom for instruction. It is appropriate for education emphasis students.

Semesters
previously
offered as an
experimental
course

Spring 2016

Spring 2018

Spring 2016 enrollment -11

Spring 2018 enrollment - 9

Co-Listed

Courses:

Course Reviewer

Comments

ershenb (01/09/19 3:19 pm): unchecked "no" for majors

Key: 4519

[Preview Bridge](#)

Course Change Request

Date Submitted: 12/06/18 3:29 pm

Viewing: **EDUC 3530 : Integrated Social Studies and Humanities for the Elementary Classroom**

File: 4518.3

Last approved: 03/26/18 3:33 am

Last edit: 01/09/19 3:22 pm

Changes proposed by: carterke

Requested **Fall 2019** ~~08/14/2018~~

Effective Change

Date

Department **Teacher Education and Certification** ~~Arts, Languages, & Philosophy~~

Discipline Education (EDUC)

Course Number 3530

Title

Integrated Social Studies and Humanities for the Elementary Classroom

Abbreviated Teaching Social Studies

Course Title

Catalog

Description

In Workflow

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

Approval Path

1. 12/06/18 3:34 pm
Audra Merfeld-Langston
(audram):
Approved for
RPHILOSΟ Chair
2. 12/10/18 4:12 pm
Kelly Carter

(carterke):

Approved for
REDUCATION
Chair

3. 12/11/18 1:17 pm

Brittany Parnell

(ershenb):

Approved for CCC
Secretary

4. 12/14/18 3:10 pm

Barry Flachsbart

(barryf):

Approved for
Social Sciences
DSCC Chair

5. 12/17/18 10:24

am

Brittany Parnell

(ershenb):

Approved for
Pending CCC
Agenda post

6. 01/09/19 3:23 pm

Brittany Parnell

(ershenb):

Approved for CCC
Meeting Agenda

7. 01/10/19 9:11 am

Stephen Raper

(sraper):

Approved for
Campus Curricula
Committee Chair

History

1. Mar 26, 2018 by
Michelle
Schwartz
(schwartzem)

The course will focus on the methodology and materials needed to facilitate elementary students' development in social studies. This course will integrate the curriculum and teaching strategies in social studies with music, physical education, and art.

Prerequisites

Educ 1040.

Field Trip

Statement

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

Total: 3

Required for Majors	No Yes
------------------------	--------------------------

Elective for Majors	No
------------------------	----

Justification for
change:

Students need background knowledge in education before taking a methods course.

Semesters
previously
offered as an
experimental
course

Spring 2016

Spring 2018

Spring 2016 enrollment- 11

Spring 2018 enrollment- 12

Co-Listed

Courses:

Course Reviewer

Comments

ershenb (01/09/19 3:22 pm): unchecked (no) required for majors.

Key: 4518

[Preview Bridge](#)

Course Change Request

Date Submitted: 11/29/18 11:13 am

Viewing: **ELEC ENG 5810 ~~5310~~: Computational Intelligence**

File: 1558.1

Last edit: 11/29/18 11:13 am

Changes proposed by: kte

Requested **Fall 2019** ~~08/14/2018~~
 Effective Change
 Date

Department Electrical and Computer Engineering

Discipline Electrical Engineering (ELEC ENG)

Course Number **5810** ~~5310~~

Title
 Computational Intelligence

Abbreviated Computational Intelligence
 Course Title

Catalog
Description

In Workflow

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

Approval Path

1. 11/29/18 12:11 pm
Daryl Beetner (daryl): Approved for RELECENG Chair
2. 11/29/18 12:16 pm

- Suzanna Long
(longsuz):
Approved for
RENGMNGT Chair
3. 11/30/18 2:45 pm
Brittany Parnell
(ershenb):
Approved for CCC
Secretary
4. 12/13/18 3:02 pm
Stephen Raper
(sraper):
Approved for
Engineering DSCC
Chair
5. 12/17/18 10:25
am
Brittany Parnell
(ershenb):
Approved for
Pending CCC
Agenda post
6. 01/09/19 3:21 pm
Brittany Parnell
(ershenb):
Approved for CCC
Meeting Agenda
7. 01/10/19 9:12 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee Chair

Introduction to Computational Intelligence (CI), Biological and Artificial Neuron,
Neural Networks, Evolutionary Computing, Swarm Intelligence, Artificial Immune

Systems, Fuzzy Systems, and Hybrid Systems. CI application case studies covered include digital systems, control, power systems, forecasting, and time-series predictions.

Prerequisites

Graduate Standing.

Field Trip

Statement

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

Total: 3

Required for	No
--------------	----

Majors

Elective for	Yes No
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Majors

Justification for

change:

In ECE, the second digit in a course number represents an area. A digit of "3" should be a control systems course and this is not a controls course. The second digit changed to "8" which is the correct one for areas outside of EE.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

COMP ENG 5310 - Computational Intelligence

SYS ENG 5211 - Computational Intelligence

Course Reviewer

Comments

Course Change Request

Date Submitted: 12/13/18 9:13 am

Viewing: **IS&T 1750 : Introduction to Management Information Systems**

File: 826.1

Last edit: 12/13/18 9:13 am

Changes proposed by: barryf

Programs

referencing this

course

[BUS&MS-BS: Business and Mgmt Systems BS](#)

Other Courses

referencing this

course

In The Prerequisites:

[BUS 5730 : Machine Learning and Artificial Intelligence for Business](#)

[ERP 2110 : Introduction to Enterprise Resource Planning](#)

[ERP 4220 : Introduction to Enterprise Decision Dashboard Prototyping](#)

[ERP 5410 : Use of Business Intelligence](#)

[IS&T 3333 : Data Networks and Information Security](#)

[IS&T 3423 : Database Management](#)

[IS&T 4641 : Digital Commerce and the Internet of Things](#)

Requested

Fall 2019 ~~08/01/2014~~

Effective Change

Date

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
10. CAT entry
11. Peoplesoft

Approval Path

1. 12/14/18 2:20 am
siauk: Approved for RINFSCTE Chair
2. 12/14/18 1:07 pm
Brittany Parnell (ershenb):
Approved for CCC Secretary

Department Business and Information Technology

Discipline Info Science & Technology (IS&T)

Course Number 1750

Title
Introduction to Management Information Systems

Abbreviated Intro to MIS

Course Title

Catalog
Description

This course familiarizes the students with the fundamental concepts and principles of management information systems. Topics covered include the strategic role of IT, decision support systems, database and datawarehouse, enterprise applications, mobile applications, and social and ethical issues related to information systems.

Prerequisites

Field Trip
Statement

Credit Hours

LEC: 3 2

LAB: 0 1

IND: 0

RSD: 0

3. 12/14/18 3:13 pm

Barry Flachsbart
(barryf):

Approved for
Social Sciences
DSCC Chair

4. 12/17/18 10:26
am

Brittany Parnell
(ershenb):

Approved for
Pending CCC
Agenda post

5. 01/09/19 3:26 pm

Brittany Parnell
(ershenb):

Approved for CCC
Meeting Agenda

6. 01/10/19 9:12 am

Stephen Raper
(sraper):

Approved for
Campus Curricula
Committee Chair

Total: 3

Required for
Majors **Yes** ~~No~~

Elective for
Majors No

Justification for
change:

Revise to be 3 hours of lecture rather than a mix of lecture and lab.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

Key: 826

[Preview Bridge](#)

Course Change Request

Date Submitted: 11/14/18 1:46 pm

Viewing: **IS&T 3333 : Data Networks and Information Security**

File: 2225.13

Last approved: 10/29/18 5:56 am

Last edit: 11/20/18 9:20 am

Changes proposed by: barryf

Other Courses
referencing this
course

In The Prerequisites:

[IS&T 3321 : Network Performance Design And Management](#)

[IS&T 4642 : E-Commerce Architecture](#)

[IS&T 6780 : Adv Human and Organizational Factors in Cybersecurity](#)

Requested	Fall Spring 2019
Effective Change Date	
Department	Business and Information Technology
Discipline	Info Science & Technology (IS&T)
Course Number	3333
Title	Data Networks and Information Security
Abbreviated Course Title	Netwk and Info Security

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
10. CAT entry
11. Peoplesoft

Approval Path

1. 11/18/18 4:04 pm
siauk: Approved for RINFSCTE Chair
2. 11/20/18 9:20 am
Brittany Parnell (ershenb):
Approved for CCC Secretary

Catalog Description

3. 11/27/18 6:11 pm
Barry Flachsbart
(barryf):
Approved for
Social Sciences
DSCC Chair
4. 12/17/18 10:26
am
Brittany Parnell
(ershenb):
Approved for
Pending CCC
Agenda post
5. 01/09/19 3:26 pm
Brittany Parnell
(ershenb):
Approved for CCC
Meeting Agenda
6. 01/10/19 9:12 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee Chair

History

1. Feb 9, 2015 by
barryf (2225.1)
2. Jun 29, 2015 by
barryf (2225.4)
3. Aug 24, 2018 by
ershenb (2225.7)
4. Oct 29, 2018 by
barryf (2225.8)

The course provides an overview of current and evolving networking and information security principles. Concepts include network standards and protocols; operation and management; switching and routing; area networks; wireless network infrastructure; security frameworks, policies, and management.

Prerequisites

At least Sophomore standing. ~~IS&T 1750; IS&T 1562 or IS&T 1552 or Comp Sci 1575.~~

Field Trip

Statement

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

Required for Majors	Yes
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Elective for Majors	No
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Justification for change:

Professor deems the specific courses not essential; but believes that this course should not be taken in the first year.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer
Comments

Course Change Request

Date Submitted: 11/14/18 1:46 pm

Viewing: **IS&T 5520 : Data Science and Machine Learning with Python**

File: 4407.13

Last approved: 10/29/18 5:57 am

Last edit: 11/20/18 9:22 am

Changes proposed by: barryf

Catalog Pages
referencing this
course

[Business Administration](#)
[Information Science and Technology.](#)

Requested **Fall** ~~Spring~~ 2019

Effective Change
Date

Department Business and Information Technology

Discipline Info Science & Technology (IS&T)

Course Number 5520

Title
Data Science and Machine Learning with Python

Abbreviated Course Title
Data Sci ML in Python

Catalog
Description

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
10. CAT entry
11. Peoplesoft

Approval Path

1. 11/18/18 4:04 pm
siauk: Approved
for RINFSCTE
Chair
2. 11/20/18 9:22 am
Brittany Parnell
(ershenb):
Approved for CCC
Secretary

3. 11/27/18 6:11 pm
Barry Flachsbart
(barryf):
Approved for
Social Sciences
DSCC Chair
4. 12/17/18 10:26
am
Brittany Parnell
(ershenb):
Approved for
Pending CCC
Agenda post
5. 01/09/19 3:27 pm
Brittany Parnell
(ershenb):
Approved for CCC
Meeting Agenda
6. 01/10/19 9:12 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee Chair

History

1. Sep 29, 2017 by
Barry Flachsbart
(barryf)
2. Nov 20, 2017 by
barryf (4407.2)
3. Jun 20, 2018 by
barryf (4407.5)
4. Oct 29, 2018 by
barryf (4407.7)

Examines data science methodologies for scraping, manipulating, transforming, cleaning, visualizing, summarizing, and modeling large-scale data as well as supervised and unsupervised machine learning algorithms applied in various business analytics and data science scenarios. Python libraries such as Pandas, NumPy, **Matplotlib**, ~~Matplotib~~, and Scikit-learn are utilized.

Prerequisites

One of Stat 3111, Stat 3113, Stat 3115, or Stat 3117; one of IS&T 1552, IS&T 1562, Comp Sci 1575; for Graduate Students: knowledge of calculus, statistics, and programming.

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 change:

Typographical error in description: Matplotib should have been Matplotlib.

Semesters previously offered as an experimental course

Co-Listed

Courses:

Course Reviewer

Comments

Course Change Request

Date Submitted: 12/14/18 3:50 pm

Viewing: **IS&T 5887 : Human-Computer Interaction Evaluation**

File: 1561.1

Last edit: 12/14/18 3:50 pm

Changes proposed by: barryf

Catalog Pages
referencing this
course

[Engineering Management
Information Science and Technology.](#)

Programs
referencing this
course

[BUS&MS-BS: Business and Mgmt Systems BS](#)

Requested	Fall 2019 08/14/2018
Effective Change Date	
Department	Business and Information Technology
Discipline	Info Science & Technology (IS&T)
Course Number	5887
Title	Human-Computer Interaction Evaluation
Abbreviated Course Title	HCI Evaluation

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
10. CAT entry
11. Peoplesoft

Approval Path

1. 12/14/18 5:02 pm
siauk: Approved for RINFSCTE Chair
2. 12/17/18 9:14 am
Brittany Parnell (ershenb):
Approved for CCC Secretary

Catalog
Description

3. 12/17/18 9:20 am
Barry Flachsbart
(barryf):
Approved for
Social Sciences
DSCC Chair
4. 12/17/18 10:26
am
Brittany Parnell
(ershenb):
Approved for
Pending CCC
Agenda post
5. 01/09/19 3:28 pm
Brittany Parnell
(ershenb):
Approved for CCC
Meeting Agenda
6. 01/10/19 9:12 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee Chair

This course covers research and analysis methods and tools for evaluation of the impact of information technology systems on humans and organizations. The focus will be on practical evaluation with the goal of providing recommendations for improving system functionality and usability.

Prerequisites

Preceded or accompanied by IS&T 5885.

Field Trip
Statement

Credit Hours

LEC: **3** ~~1.5~~

LAB: **0** ~~1.5~~

IND: 0

RSD: 0

Total: 3

Required for
Majors No

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

Justification for
change:

Revise to be 3 hours of lecture rather than a mix of lecture and lab.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments

Key: 1561

[Preview Bridge](#)

Course Change Request

Date Submitted: 11/15/18 1:10 pm

Viewing: **MET ENG 5150 : Introduction to Metal Additive Manufacturing ~~Particulate Materials~~**

File: 1596.6

Last approved: 10/31/16 3:11 am

Last edit: 11/16/18 3:42 pm

Changes proposed by: ershenb

Requested **Fall 2019** ~~08/14/2017~~

Effective Change

Date

Department Materials Science & Engineering

Discipline Metallurgical Engineering (MET ENG)

Course Number 5150

Title

Introduction to **Metal Additive Manufacturing** ~~Particulate Materials~~

Abbreviated **Intro Met Additive Mfg** ~~Intro~~

Course Title ~~to Particulate Mat.~~

Catalog
Description

In Workflow

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

Approval Path

1. 11/15/18 7:08 pm
Greg Hilmas (ghilmas):
Approved for RMATSENG Chair
2. 11/16/18 3:43 pm
Brittany Parnell (ershenb):
Approved for CCC Secretary

3. 12/03/18 8:53 am
Stephen Raper
(sraper):
Approved for
Engineering DSCC
Chair
4. 12/17/18 10:26
am
Brittany Parnell
(ershenb):
Approved for
Pending CCC
Agenda post
5. 01/09/19 3:28 pm
Brittany Parnell
(ershenb):
Approved for CCC
Meeting Agenda
6. 01/10/19 9:12 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee Chair

History

1. Oct 31, 2016 by
smiller (1596.1)

Metal and alloys associated with Additive Manufacturing (AM). Powder metallurgy and ceramic components, filters, catalysts, nanomaterials, vitamins and more depend strongly on particulate, or powder, characteristics and processing. Issues with powders and wires as starting materials, Aspects of powder fabrication, characterization, safety, solidification mechanisms and development of microstructure and defects, AM part performance, and mechanical properties.

~~handling, component fabrication, secondary processing, and applications will be covered.~~ **Current alloys being utilized and future materials being developed.**

Prerequisites

Met Eng 2110.

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	Yes
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Majors

Justification for
change:

Course now has a focus on metal powder as an additive manufacturing component.

Semesters

previously
offered as an
experimental
course

Co-Listed

Courses:

Course Reviewer

Comments

ershenb (11/16/18 3:42 pm): Made the proposed changes per the request of Dr. Scott Miller (CourseLeaf technical issues).

Key: 1596

[Preview Bridge](#)

Course Change Request

New Course Proposal

Date Submitted: 11/26/18 11:05 am

Viewing: **POL SCI 4500 : Geopolitics and International Security**

File: 4583

Last edit: 11/27/18 9:14 am

Changes proposed by: krolikowskia

Requested	Fall 2019
Effective Change Date	
Department	History and Political Science
Discipline	Political Science (POL SCI)
Course Number	4500
Title	Geopolitics and International Security
Abbreviated Course Title	International Security

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. 11/26/18 11:24 am
sfogg: Approved for RHISTORY Chair
2. 11/27/18 9:14 am
Brittany Parnell (ershenb):

Approved for CCC
Secretary

3. 11/27/18 9:28 am

Petra Dewitt

(dewittp):

Approved for Arts
& Humanities

DSCC Chair

4. 12/17/18 10:26

am

Brittany Parnell

(ershenb):

Approved for

Pending CCC

Agenda post

5. 01/09/19 3:35 pm

Brittany Parnell

(ershenb):

Approved for CCC

Meeting Agenda

6. 01/10/19 9:12 am

Stephen Raper

(sraper):

Approved for

Campus Curricula

Committee Chair

This course surveys seminal scholarship in the field of international security and explores its relevance to contemporary geopolitical issues. Specific topics addressed may include space security, nuclear security, and technological change in military affairs.

Prerequisites

Pol Sci 1200 or History 1200 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	No			

Justification for
new course:

This course complements other political-science course offerings by addressing a major field of the discipline that existing courses cannot explore in depth. This course will be of particular relevance to students pursuing degrees, certificates, or career goals related to national security, international affairs, geospatial tools and applications, government relations, the defense industries, or other technology-intensive sectors. The course is being added as part of the new Graduate Certificate in Geoanalytics and Geointelligence.

Semesters
previously
offered as an
experimental
course

N/A. Part of new certificate

Co-Listed
Courses:

Course Reviewer
Comments

Key: 4583

[Preview Bridge](#)

Program Change Request

Date Submitted: 12/11/18 7:07 pm

Viewing: **CH ENG-BS : Chemical Engineering
BS**

File: 150.65

Last approved: 11/02/18 11:29 am

Last edit: 12/13/18 10:56 am

Changes proposed by: jcwang

Catalog Pages Using this Program
[Chemical & Biochemical Engineering](#)

Start Term

Fall 2019

Program Code

CH ENG-BS

Department

Chemical and Biochemical Engineering

Title

Chemical Engineering BS

Program Requirements and Description

In Workflow

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

Approval Path

1. 12/11/18 7:37 pm
Muthanna Al-Dahhan
(aldahhanm):
Approved for
RCHEMENG Chair
2. 12/13/18 3:10 pm
Brittany Parnell
(ershenb):
Approved for CCC
Secretary
3. 12/17/18 12:16 pm
Stephen Raper
(sraper): Approved
for Engineering
DSCC Chair
4. 12/17/18 1:18 pm
Brittany Parnell
(ershenb):
Approved for
Pending CCC
Agenda post
5. 01/09/19 3:35 pm
Brittany Parnell
(ershenb):
Approved for CCC
Meeting Agenda

6. 01/10/19 9:11 am
Stephen Raper
(sraper): Approved
for Campus
Curricula
Committee Chair

History

1. Mar 18, 2014 by
Lahne Black (lahne)
2. May 2, 2014 by
Lahne Black (lahne)
3. Jan 30, 2015 by
kleb6b
4. Jul 15, 2015 by
pantaleoa
5. Jul 15, 2015 by
pantaleoa
6. Nov 18, 2015 by
marlene
7. Mar 7, 2016 by
Daniel Forciniti
(forcinit)
8. Mar 27, 2017 by
Daniel Forciniti
(forcinit)
9. May 3, 2018 by
Daniel Forciniti
(forcinit)
10. May 7, 2018 by
Brittany Parnell
(ershenb)
11. May 7, 2018 by
Brittany Parnell
(ershenb)
12. May 7, 2018 by
Brittany Parnell
(ershenb)
13. Jul 3, 2018 by
Brittany Parnell
(ershenb)
14. Nov 2, 2018 by Jee-
Ching Wang
(jcwang)

Bachelor of Science Chemical Engineering

Entering freshmen desiring to study chemical engineering will be admitted to the Freshman Engineering Program. They will be permitted, if they wish, to state a chemical engineering preference, which will be used as a consideration for available freshman departmental scholarships. The focus of the Freshman Engineering Program is on enhanced advising and career counseling, with the goal of providing to the student the information necessary to make an informed decision regarding the choice of a major.

For the bachelor of science degree in chemical engineering a minimum of 129 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry and basic ROTC courses. An average of at least two grade points per credit hour must be attained. At least two grade points per credit hour must also be attained in all courses taken in chemical engineering.

Each student's program of study must contain a minimum of 21 credit hours of course work in general education and must be chosen according to the following rules:

1. All students are required to take one American history course, one economics course, one humanities course, and [ENGLISH 1120](#). 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](#). The humanities course must be selected and meets the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog.
2. Depth requirement. Three credit hours must be taken in humanities or social sciences at the 1000 level or above and must be selected from the approved list. This course must have as a prerequisite one of the humanities or social sciences courses already taken. Foreign language courses numbered 1180 will be considered to satisfy this requirement. Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 3000 level or above. All courses taken to satisfy the depth requirement must be taken after graduating from high school.
3. The remaining two courses are to be chosen and meets the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog and may include one communications course in addition to [ENGLISH 1120](#).
4. Any specific departmental requirements in the general studies area must be satisfied and meets the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog.
5. Special topics and special problems and honors seminars are allowed only by petition to and approval by the student's department chairman.

The chemical engineering program at Missouri S&T is characterized by its focus on the scientific basics of engineering and its innovative application; indeed, the underlying theme of this educational program is the application of the scientific basics to engineering practice through attention to problems and needs of the public. The necessary interrelations among the various topics, the engineering disciplines, and the other professions as they naturally come together in the solution of real world problems are emphasized as research, analysis, synthesis, and design are presented and discussed through classroom and laboratory instruction.

Freshman Year			
First Semester	Credits	Second Semester	Credits
FR ENG 1100	1	MECH ENG 1720	3
CHEM 1310	4	CHEM ENG 1100, or COMP SCI 1972 and COMP SCI 1982, or COMP SCI 1971 and COMP SCI 1981, or COMP SCI 1570 and COMP SCI 1580	3-4
CHEM 1319	1	COMP SCI 1972, or 1971, or 1570⁷	2-3
ENGLISH 1120	3	COMP SCI 1982, or 1981, or 1580⁷	1
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3	CHEM 1320	3
MATH 1214	4	MATH 1215	4
CHEM 1100	1	PHYSICS 1135	4
	17		17-18
Sophomore Year			
First Semester	Credits	Second Semester	Credits
CHEM ENG 2100¹	3	CHEM ENG 2110¹	3

CHEM ENG 2300	3	CHEM ENG 2310 ²	1
CHEM 2210	4	Science Elective ⁵	4
MATH 2222	4	MATH 3304	3
PHYSICS 2135	4	Humanities and Social Sciences Elective ⁴	3
		Humanities and Social Sciences Elective ⁴	3
	18		17
Junior Year			
First Semester	Credits	Second Semester	Credits
CHEM ENG 3101	4	CHEM ENG 3131	3
CHEM ENG 3111	3	CHEM ENG 3141	2
CHEM ENG 3120 ¹	3	CHEM ENG 3150	3
ECON 1100 or 1200	3	STAT 3113	3
Upper level Humanities or Social Science Elective ⁴	3	ENGLISH 1160 or 3560	3
	16		14
Senior Year³			
First Semester	Credits	Second Semester	Credits
CHEM ENG 4091	3	CHEM ENG 4097 ²	3
CHEM ENG 4101 ²	3	CHEM ENG 4130 ²	3
CHEM ENG 4140	3	CHEM ENG 5XXX-Chem Eng Elective ⁶	3
CHEM ENG 4110	3	Chem Eng 5xxx --Chem Eng Elective ⁶	3
CHEM ENG 4241	3	Chem Eng 5xxx -Chem Eng Elective ⁶	3
CHEM ENG 5XXX-Chem Eng Elective ⁶	3		
	15		15
Total Credits: 129-130			

Note: The minimum number of hours required for a degree in chemical engineering is 129.

A cumulative grade point average of 2.50 or better and a "C" or better in [CHEM 1310](#), [CHEM 1319](#), [CHEM 1320](#), [MATH 1214](#), [MATH 1215](#) ~~CHEM 1310~~, ~~CHEM 1319~~, ~~CHEM 1320~~, ~~MATH 1214~~, ~~MATH 1215~~ and [PHYSICS 1135](#) ~~Physics 1135~~ are required to be admitted into the chemical engineering major.

1	A grade of "C" or better is required in CHEM ENG 2100 & CHEM ENG 2110 in order to enroll in Chem Eng 3120 .
2	Communications emphasized course (See bachelor of science degree, general education communications requirement).
3	Chemical engineering majors are encouraged to take the fundamentals of engineering exam prior to graduation. It is the first step toward becoming a registered professional engineer.
4	Must meet the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog. The prerequisites for the upper level course must be completed with a passing grade.
5	CHEM 2510 , or CHEM 4610 and CHEM 4619 , or BIO SCI 2213 and BIO SCI 2219 , or CHEM 2220 and CHEM 2219 , or Bio Sci 3313 and Bio Sci 3319 , or CHEM 3420 and CHEM 3459 .
6	A minimum of 12 cr. hr. from any Chem Eng 5xxx and any class from the approved list published on the Chemical Engineering web site but only 3 cr. hr. of CHEM ENG 4000 , CHEM ENG 4099 or Chem Eng 4099H. Students may have no more than three hours from approved out-of-department electives.

- ⁷ The programming elective will consist of a lecture and lab combination, and may be selected from [COMP SCI 1971/COMP SCI 1981](#), [COMP SCI 1972/COMP SCI 1982](#), or [COMP SCI 1570/COMP SCI 1580](#). Note that [COMP SCI 1570/COMP SCI 1580](#) requires one more credit hour than the other option. The lecture component must be completed with a grade of "C" or better.

Chemical Engineering Biochemical Engineering Emphasis

Freshman Year			
First Semester	Credits	Second Semester	Credits
FR ENG 1100	1	MECH ENG 1720	3
CHEM 1310	4	CHEM ENG 1100, or COMP SCI 1972 and COMP SCI 1982, or COMP SCI 1971 and COMP SCI 1981	3
CHEM 1319	1	COMP SCI 1972 , or 1971 , or 1570 ⁶	2-3
ENGLISH 1120	3	COMP SCI 1982 , or 1981 , or 1580 ⁶	1
HISTORY 1200 , or 1300 , or 1310 , or POL SCI 1200	3	CHEM 1320	3
MATH 1214	4	MATH 1215	4
CHEM 1100	1	PHYSICS 1135	4
	17		17-18
Sophomore Year			
First Semester	Credits	Second Semester	Credits
CHEM ENG 2100 ¹	3	CHEM ENG 2110 ¹	3
CHEM ENG 2300	3	CHEM ENG 2310 ²	1
CHEM 2210	4	STAT 3113	3
MATH 2222	4	Science Elective ⁵	4
PHYSICS 2135	4	MATH 3304	3
		ECON 1100 or 1200	3
	18		17
Junior Year			
First Semester	Credits	Second Semester	Credits
CHEM ENG 3101	4	ECON 1100 or 1200	3
CHEM ENG 3111	3	CHEM ENG 3131	3
CHEM ENG 3120 ¹	3	CHEM ENG 3141	2
Science Elective ⁵	4	CHEM ENG 3150	3
Humanities or Social Sciences Elective ⁴	3	Science Elective ⁵	4
		ENGLISH 1160 (or English 3560)	3
	17		15
Senior Year ³			
First Semester	Credits	Second Semester	Credits
CHEM ENG 4091	3	CHEM ENG 4097 ²	3
CHEM ENG 4220 ²	3	CHEM ENG 4210	3

CHEM ENG 4110	3	CHEM ENG 4220	3
CHEM ENG 5250	3	CHEM ENG 4241	3
CHEM ENG 4201	3	Humanities or Social Science Elective ⁴	3
Upper Level Humanities or Social Sciences Elective ⁴	3	CHEM ENG 4201²	3
	15		15
Total Credits: 131-132			

Note: The minimum number of hours required for a degree in chemical engineering with an emphasis in biochemical engineering is 131.

A cumulative grade point average of 2.50 or better and a "C" or better in [CHEM 1310](#), [CHEM 1319](#), [CHEM 1320](#), [MATH 1214](#), [MATH 1215](#) ~~Chem 1310, Chem 1319, Chem 1320, Math 1214, Math 1215~~ and [PHYSICS 1135](#) ~~Physics 1135~~ are required to be admitted into the chemical engineering major.

1	A grade of "C" or better is required in CHEM ENG 2100 & CHEM ENG 2110 in order to enroll in CHEM ENG 3120 .
2	Communications emphasized course (See bachelor of science degree, general education communications requirement).
3	Chemical engineering majors are encouraged to take the fundamentals of engineering exam prior to graduation. It is the first step toward becoming a registered professional engineer.
4	Must meet the requirements as specified under "Engineering Degree Requirements" published in the current undergraduate catalog. The prerequisites for the upper level course must be completed with a passing grade.
5	A minimum of 12 credit hours in Science Electives are required. Select three courses from CHEM 2220 , CHEM 4610 , CHEM 4620 , BIO SCI 2213 , BIO SCI 3313 , and BIO SCI 4323 ; and a minimum of two laboratory courses from CHEM 2229 or CHEM 2219 , CHEM 4619 , BIO SCI 2219 , BIO SCI 3319 , and BIO SCI 4329 .
6	The programming elective consists of a lecture and lab combination, and may be selected from COMP SCI 1971/COMP SCI 1981, COMP SCI 1972/COMP SCI 1982, or COMP SCI 1570/COMP SCI 1580. Note that COMP SCI 1570/COMP SCI 1580 requires one more credit hour than the other options. The lecture component must be completed with a grade of "C" or better.

Justification for request

1. Comp Sci 1570 and Comp Sci 1580 are added as alternative choices because they have been accepted in recent years as equivalent Comp Sci courses by the ChE department.
2. Chemical process safety and biochemical process safety courses are unified into one (ChE 4241) to cover both components for all ChE students.
3. ChE 4220 and ChE 4201 are swapped between the two semesters of senior year in order to match their lecture courses better for more effective teaching and learning of BioChE emphasis area.
4. Footnote 5: Chem 2289 (Organic Chemistry Lab) is not longer offered by the Chemistry Department. The ChE department has been accepting Chem 2219 (Organic Chemistry I Lab) for this purpose in recent years.
5. Footnote 6: Replace a fixed number (4) of tech. elect. courses with an equivalent number (12) of credit hours in order to allow a greater variety of tech. elect. courses to be developed and offered to ChE

students. H (honor session) was missing from and is added back to the second Chem Eng 4099 in the sentence.

Supporting Documents

Course Reviewer Comments

ershenb (12/12/18 9:07 am): .

ershenb (12/13/18 9:23 am): Per the request of Dr. Wang, removed ChE 1100 from Freshman Yr. 2nd semester from both ChE BS and BioChE emphasis. Formatted the COMP SCI programming electives per ChE BS footnote 7 and BioChE emphasis footnote 6.

ershenb (12/13/18 10:56 am): Per Dr. Wang's request, correct the Number 3 in the justifications section to show ChE 4220 (not ChE 4210), was swapped with ChE 4201.

Key: 150

New Experimental Course Proposal

Date Submitted: 11/26/18 10:00 am

Viewing: **ELEC ENG 5001.007 : Process
Control System Safety, Security and
Alarms**

File: 4582

Last edit: 12/17/18 9:57 am

Changes proposed by: kte

Requested Fall 2019

Effective Change

Date

Department

Electrical and Computer Engineering

Discipline

Electrical Engineering (ELEC ENG)

Course Number 5001

Topic ID 007

Experimental

Title

In Workflow

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

Approval Path

1. 11/21/18 3:38 pm
Daryl Beetner
(daryl): Approved
for RELECENG
Chair
2. 11/26/18 9:17 am
Brittany Parnell
(ershenb):
Rollback to
Initiator
3. 11/26/18 11:21
am
Daryl Beetner

(daryl): Approved
for RELECENG
Chair

4. 11/26/18 1:54 pm
Muthanna Al-
Dahhan

(aldahhanm):
Approved for
RCHEMENG Chair

5. 11/27/18 9:07 am
Brittany Parnell

(ershenb):
Approved for CCC
Secretary

6. 12/03/18 8:53 am
Stephen Raper

(sraper):
Approved for
Engineering DSCC
Chair

7. 12/17/18 10:25
am

Brittany Parnell
(ershenb):
Approved for
Pending CCC
Agenda post

8. 01/09/19 3:37 pm
Brittany Parnell

(ershenb):
Approved for CCC
Meeting Agenda

	<p>9. 01/10/19 9:12 am Stephen Raper (sraper): Approved for Campus Curricula Committee Chair</p> <p>10. 01/10/19 9:25 am Marita Tibbetts (tibbettsmg): Approved for CAT entry</p>
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Process Control System Safety, Security and Alarms

Experimental Proc Cont Safe Secur Alm

Abbreviated

Course Title

Instructors Kelvin Erickson

Experimental

Catalog

Description

Lifecycle approach for industrial automation in the context of IEC 61511 (safety) and IEC 62443 (IACS cybersecurity) standards. Functional safety and cybersecurity fundamentals for risk analysis, safety/ cybersecurity requirements, inherently safer/secure design techniques, SIL/SL verification, operations, real-world cybersecurity attacks, alarm management.

Prerequisites

Elec Eng 3340 or Chem Eng 4110.

Field Trip

Statement

None

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

Total: 3

Justification for

new course:

Subject matter that is important to those in the field of process control and factory automation. This course will be taught online, using existing courses or parts of courses already offered online by Exida in these subject areas. The S&T instructor will coordinate the course, but the content will be taught by Exida engineers. I expect to add a Chem Eng co-list, but am submitting the EC now rather than wait on the CBE department.

Semester(s)

previously taught

None

Co-Listed

Courses:

CHEM ENG 5001 - Special Topics

Course Reviewer

Comments

ershenb (11/26/18 9:17 am): Rollback: Rollback per Dr. Erickson's email.

Key: 4582

[Preview Bridge](#)

Course Change Request

New Experimental Course Proposal

Date Submitted: 11/27/18 3:26 pm

Viewing: **HISTORY 3001.007 : World History**

File: 4584

Last edit: 12/17/18 10:07 am

Changes proposed by: behrendta

Requested Fall 2019

Effective Change

Date

Department History and Political Science

Discipline History (HISTORY)

Course Number 3001

Topic ID 007

Experimental

Title

World History

Experimental World History

Abbreviated

Course Title

Instructors Andrew Behrendt

Experimental

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. **CAT entry**
8. **Registrar**

Approval Path

1. 11/27/18 3:29 pm
sfogg: Approved for RHISTORY Chair
2. 11/28/18 9:29 am
Brittany Parnell (ershenb): Approved for CCC Secretary
3. 11/28/18 9:50 am
Petra Dewitt (dewittp): Approved for Arts

- & Humanities
DSCC Chair
4. 12/17/18 10:26 am
Brittany Parnell (ershenb):
Approved for Pending CCC Agenda post
 5. 01/09/19 3:41 pm
Brittany Parnell (ershenb):
Approved for CCC Meeting Agenda
 6. 01/10/19 9:12 am
Stephen Raper (sraper):
Approved for Campus Curricula Committee Chair
 7. 01/10/19 9:23 am
Marita Tibbetts (tibbettsmg):
Approved for CAT entry

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

One of the following: History 1100, History 1200, History 1300, or History 1310.

Field Trip

Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Justification for

new course:

Missouri S&T currently does not offer a World History survey course, which a standard offering among undergraduate history programs. The field of world history is one of the most active and innovative areas in contemporary historical research and pedagogy. This is in response not only to academic trends, but to a general demand for a more "globalized" undergraduate education. The way this course is designed, as a one-semester survey, aims to help train students to "think globally" by taking the whole world as the basic unit of analysis. It will also give them brief introductions to the history of contemporary issues, such as globalization, the "rise" of Asia, the place of Islam in world history, global environmental history, and the development of global commercial networks.

Semester(s)

previously taught

Never at Missouri S&T, but the proposed instructor has taught it multiple times at the University of Pittsburgh.

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4584

[Preview Bridge](#)

Minor Creation Policy Ad Hoc Committee Report

Introduction

The purpose for the Experimental Course (EC) process is to allow for development of modern degrees via new course content but also to help determine marketability and viability/cost effectiveness of the new courses. New or substantially different degree programs are subject to degree viability justification and approval by state agencies. New course creation can skip the EC process by making the course to be required within a degree program. Minor and certificate programs are useful marketing tools that exemplify uniqueness and value of the S&T campus to attract students but are elective and supportive to a program of study, not degree programs in their own right.

Course viability is subject to the Chancellor Policy Memo II-30, as well as the respective policies of each college. While course enrollments of courses being developed within the EC process are more lenient than permanently numbered courses, it is expected that new courses with permanent numbers will meet viability policies. Minors are commonly created for the purposes specified above as an extension of a degree program, having required courses in common, which has no additional program cost since the courses are populated as required parts of the degree program. As such, minors created from degree programs are encouraged. Departments can choose to skip the EC process and create a new permanent course, e.g., when creating a minor, emphasis, or certificate, in addition to courses that are also to be required within a degree program.

Certificates are to undergo regular curriculum approval processes, subject to the following:

Undergraduate certificates must have one primary owner (i.e., degree program) that does not preclude co-listing and must consist of currently offered or already approved (i.e., hard numbered) courses. Experimental courses may not be included as a part of a proposed certificate program of study. Proposed certificate programs, once approved, shall not allow substitute courses except in extenuating circumstances. Such extenuating circumstances must be approved by the associated Dean of the College in which the certificate program resides or of Graduate Studies for graduate certificates. Approved certificates shall become effective in the Fall Semester of an academic year. Certificates already approved or in approval processes prior to creation of this policy shall be grandfathered as approved under their existing processes but any future changes to those or later certificates must follow the regular curriculum approval system/processes.

Proposed Certificate programs of study must be submitted to the Missouri Department of Higher Education (MDHE) for approval. Certificate proposals are to be submitted through the campus curriculum approval process in parallel with an MDHE submittal after approval by the associated Dean, and can be approved by faculty senate and become a Certificate subject to MDHE approval. The action of MDHE shall be reported by the CCC at the FS meeting following MDHE approval or rejection of the Certificate.

Minor or Certificate with Permanent Course Creation

The goal is to underscore the excellence available in academic learning on campus but to not maintain those that do not attract students. Each degree program is allowed one minor or certificate program that requires no student population justification per year, having been ostensibly created from required courses of their degree program, but departments may create as many other minors or certificates as are reasonably populated. All current minor and certificate programs are included in any counting of minors and certificates that are not justified by population.

Minors or certificates can be used as a reason to create new classes that bypass the EC process provided there is a compelling reason for their creation. The campus curriculum committee (CCC) will recommend to the Senate those that are deemed compelling. All proposed permanent courses, those proposing non-experimental catalog numbers, must be required in the minor or certificate. No more than 6 credit hours of new permanent courses per year that bypass the EC process are allowed; any additional course credit hours bypassing the EC process must be well-justified.

Course Purging Policy

To avoid simply a bypassing of the EC process, minors and certificates and their respective courses shall be evaluated for number of students completing said minor and courses at a period of 5 years and assessed against the appropriate campus policy(ies). Minors and certificates and their courses required within the minor or certificate not meeting those policies are to be deactivated along with the new courses that were created outside the EC process when the minor or certificate was created unless the course has been taught successfully within the last 5 years.

Courses not taught are routinely purged from the catalog about every 10 years. At the 10 year review, any required courses for a degree program, minor, or certificate but having not been taught successfully during the last 10 years will be assessed by the campus curriculum committee for deactivation, along with the degree program, minor, or certificate requiring that course.