Campus Curricula Committee Meeting Agenda
October 28, 2020
8:15am - 9:45am, Zoom
(For Faculty Senate Meeting of November 19, 2020)

Review of submitted Course Change forms:

File: 4219.12	ARCH ENG 4850 : Building Electrical Systems
File: 2306.6	CHEM ENG 3110 : Chemical Engineering Heat Transfer
File: 2310.5	CHEM ENG 3130 : Staged Mass Transfer
File: 1526.6	CHEM ENG 3140 : Continuous Mass Transfer
File: 1479.4	CHEM ENG 3160 : Molecular Chemical Engineering
File: 1606.6	CHEM ENG 3200 : Biochemical Separations
File: 1083.1	CHEM ENG 4096 : Chemical Engineering Economics
File: 1394.1	CHEM ENG 4100 : Chemical Engineering Laboratory I
File: 383.1	CHEM ENG 4120 : Process Dynamics And Control Laboratory
File: 1084.1	CHEM ENG 4150 : Chemical Process Flowsheeting
File: 4740	COMP SCI 5407 : Introduction to Virtual Reality
File: 1909.1	COMP SCI 6604 : Mobile, IoT and Sensor Computing
File: 4738	MATH 6603 : Mathematical Foundations of Finite Element Methods II

Review of submitted Degree Change forms:

File: 136.1	THEATRE-MI : Theatre Minor

Review of submitted Certificate forms:

File: 346.8	GEO SCI-CT : Geoenvironmental Science and Engineering CT
File: 369	PROPOSED : Advanced Materials for Sustainable Infrastructure CT
File: 370	PROPOSED : Building Systems Engineering CT
File: 371	PROPOSED : Surface Water Resources CT
File: 368	PROPOSED : UCT - TECHNOLOGY, PHILOSOPHY, AND ETHICAL FUTURES

Review of submitted Experimental Course forms:

File: 4737	AERO ENG 6001.004 : Computational Plasma Physics and Modern Scientific Programming
File: 4727	CIV ENG 5001.005 : Water Treatment Challenges: Desalination, Metals, and Water Reuse
File: 4741	COMP SCI 6001.006 : Introduction to Augmented and Virtual Reality
File: 4739	MECH ENG 6001.004 : Design for Additive Manufacturin

Course Change Request

Date Submitted: 10/01/20 3:46 pm

Viewing: **ARCH ENG 4850 : Building Electrical Systems**

File: 4219.12

Last approved: 02/04/19 5:02 am

Last edit: 10/01/20 3:46 pm

Changes proposed by: seelyj

Programs referencing this course

ARC ENG-BS: Architectural Engineering BS

Requested Effective Change Date	Fall **2021** ~~2019~~
Department	Civil, Architectural, and Environmental Engineering
Discipline	Architectural Engineering (ARCH ENG)
Course Number	4850
Title	
Abbreviated Course Title	Bldg Elect Syst

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. 10/01/20 3:50 pm Joel Burken (burken): Approved for RCIVILEN Chair
2. 10/02/20 6:00 am Marita Tibbetts (tibbettsmg):

Approved for CCC Secretary
3. 10/12/20 2:15 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Sep 21, 2015 by Stuart Baur (baur)
2. Feb 5, 2018 by baur (4219.5)
3. Feb 4, 2019 by baur (4219.8)

Building Electrical Systems

Catalog Description

The design of interior and exterior building electrical systems, including power loads, branch circuits and switching. Work includes study of applicable NFPA 70 (NEC) and related building codes.

Prerequisites

Math 3304 ~~Arch Eng 4800~~ and Physics 2135.

Field Trip Statement

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

Total: 3

Yes ~~No~~

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

Justification for change:

Change Prerequisites. Since ArchE 5820 is now a Tech Elective and ArchE 4800 requires students to be in succinct path to graduate the recommendation is to revert the prerequisites back to the way they were originally – Phys 2135 and Math 3304. Thus eliminating the critical path to a more reasonable process.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 4219

Preview Bridge

Course Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 09/28/20 4:04 pm

Viewing: **CHEM ENG 3110 : Chemical Engineering Heat Transfer**

File: 2306.6

Last approved: 05/04/15 3:20 am

Last edit: 09/30/20 11:14 am

Changes proposed by: luksc

Programs referencing this course

EV ENG-BS: Environmental Engineering BS

Other Courses referencing this course

In The Prerequisites:

CHEM ENG 4100 : Chemical Engineering Laboratory I

Requested Effective Change Date: **Spring 2021** ~~01/12/2016~~

Department

Chemical and Biochemical Engineering

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. 09/28/20 4:04 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
2. 09/30/20 10:55 am

Discipline
Chemical Engineering (CHEM ENG)

Course Number 3110

Title

Hu Yang (huyang): Approved for RCHEMENG Chair
3. 09/30/20 11:14 am
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:15 pm
Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. May 4, 2015 by luksc (2306.1)

Chemical Engineering Heat Transfer

Abbreviated Course Title Heat Transfer

Catalog Description

Process principles of heat transfer in the chemical process industry. Steady and unsteady state heat conduction and radiation heat transfer. Free and forced convection and condensation and boiling heat transfer. Practical heat exchanger design.

Prerequisites

Math 2222 and preceded or accompanied by Chem Eng 3100. Chem Eng majors only.

Field Trip Statement				
Credit Hours Total: 2	LEC: 2	LAB: 0	IND: 0	RSD: 0
Required for Majors	Yes			
Elective for Majors	No			

Justification for change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (09/28/20 4:04 pm): Rollback: Change in dept chair

Key: 2306

Preview Bridge

Course Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 09/29/20 9:07 am

Viewing: **CHEM ENG 3130 : Staged Mass Transfer**

File: 2310.5

Last approved: 06/29/15 3:51 am

Last edit: 09/30/20 11:14 am

Changes proposed by: luksc

Other Courses referencing this course

In The Prerequisites:

CHEM ENG 3140 : Continuous Mass Transfer

CHEM ENG 4096 : Chemical Engineering Economics

Requested Effective Change Date: **Fall 2021** ~~01/12/2016~~

Department: Chemical and Biochemical Engineering

Discipline: Chemical Engineering (CHEM ENG)

Course Number: 3130

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. 09/28/20 4:04 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
2. 09/29/20 8:46 am Marita Tibbetts

Title

(tibbettsmg): Rollback to Initiator

3. 09/30/20 10:55 am
   Hu Yang (huyang): Approved for RCHEMENG Chair
4. 09/30/20 11:14 am
   Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
5. 10/12/20 2:15 pm
   Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Jun 29, 2015 by luksc (2310.1)

Staged Mass Transfer

Abbreviated Course Title: Staged Mass Transfer

Catalog Description

Principles of equilibrium stage operations applied to distillation, liquid-liquid extraction, absorption, and leaching. Methods for estimating pressure drop and

stage efficiencies are also studied. Quantitative solutions to practical problems are stressed.

Prerequisites
Chem Eng 3120, admitted to Chem Eng program.

Field Trip Statement

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

Justification for change:
Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments
kristyg (09/28/20 4:04 pm): Rollback: Change in dept chair
tibbettsmg (09/29/20 8:46 am): Rollback: Will you just try resubmitting this one to see if Dr. Yang can approve it?

Key: 2310

Preview Bridge

Course Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 09/28/20 4:05 pm

Viewing: **CHEM ENG 3140 : Continuous Mass Transfer**

File: 1526.6

Last approved: 05/04/15 3:20 am

Last edit: 09/30/20 11:15 am

Changes proposed by: luksc

Other Courses referencing this course

In The Prerequisites:

CHEM ENG 3150 : Chemical Engineering Reactor Design

Requested Effective Change Date	**Fall 2021** ~~01/12/2016~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	3140
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. 09/28/20 4:04 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
2. 09/30/20 10:55 am

Hu Yang (huyang): Approved for RCHEMENG Chair
3. 09/30/20 11:15 am
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:15 pm
Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. May 4, 2015 by luksc (1526.1)

Continuous Mass Transfer

Abbreviated Course Title: Continuous Mass Transfer

Catalog Description

Fundamentals of diffusion and mass transfer applied to absorption, extraction, humidification, drying and filtration. Design and rating of continuous chemical separators.

Prerequisites

Preceded or accompanied by Chem Eng 3130. Chem Eng majors only.

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

Justification for change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (09/28/20 4:04 pm): Rollback: Change in dept chair

Key: 1526

Preview Bridge

Course Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 09/28/20 4:05 pm

Viewing: **CHEM ENG 3160 : Molecular Chemical Engineering**

File: 1479.4

Last approved: 06/24/15 3:58 am

Last edit: 09/30/20 11:15 am

Changes proposed by: luksc

Requested Effective Change Date	**Fall 2021** ~~08/17/2015~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	3160
Title	
Abbreviated Course Title	Molecular Ch Eng
Catalog Description	
Prerequisites	

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. 09/28/20 4:04 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
2. 09/30/20 10:55 am

Hu Yang (huyang): Approved for RCHEMENG Chair
3. 09/30/20 11:15 am
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:15 pm
Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. Jun 24, 2015 by luksc (1479.1)

Molecular Chemical Engineering

Introduction to the molecular aspects of chemical thermodynamics, transport processes, reaction dynamics, and statistical and quantum mechanics.

Chem Eng 3120, admitted to Chem Eng program.

Field Trip

Statement

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

Elective for
Majors

Justification for
change:
Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters
previously
offered as an
experimental
course

Co-Listed
Courses:

Course Reviewer
Comments
kristyg (09/28/20 4:04 pm): Rollback: Change in dept chair

Key: 1479

Preview Bridge

Course Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 09/28/20 4:05 pm

Viewing: **CHEM ENG 3200 : Biochemical Separations**

File: 1606.6

Last approved: 05/04/15 3:20 am

Last edit: 09/30/20 11:16 am

Changes proposed by: luksc

Other Courses referencing this course

In The Prerequisites:

CHEM ENG 3150 : Chemical Engineering Reactor Design

CHEM ENG 4200 : Biochemical Separations Laboratory

Requested Effective Change Date: **Fall 2021** ~~01/12/2016~~

Department: Chemical and Biochemical Engineering

Discipline: Chemical Engineering (CHEM ENG)

Course Number: 3200

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. 09/28/20 4:04 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
2. 09/30/20 10:55 am

Title

Hu Yang (huyang): Approved for RCHEMENG Chair

3. 09/30/20 11:16 am
   Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:16 pm
   Stephen Raper (sraper): Approved for Engineering DSCC Chair

History

1. May 4, 2015 by luksc (1606.1)

Biochemical Separations

Abbreviated Course Title: Biochemical Separations

Catalog Description

The fundamentals of mass transfer are introduced and applied to various unit operations employed in the separation of chemical and biochemical compounds.

Prerequisites

Chem Eng 3120. Chem Eng majors only.

Field Trip Statement

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

Justification for change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters previously offered as an experimental course

Changed to required for majors, based on Chem Eng email.

Co-Listed Courses:

Course Reviewer Comments

kristyg (09/28/20 4:04 pm): Rollback: Change in dept chair

Key: 1606

Preview Bridge

Course Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 09/28/20 4:05 pm

Viewing: **CHEM ENG 4096 : Chemical Engineering Economics**

File: 1083.1

Last edit: 09/30/20 11:16 am

Changes proposed by: luksc

Requested Effective Change Date	**Fall 2021** ~~08/14/2018~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4096
Title	
Abbreviated Course Title	Chemical Engr Economics
Catalog Description	
Prerequisites	

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. 09/28/20 4:04 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
2. 09/30/20 10:55 am

Hu Yang (huyang): Approved for RCHEMENG Chair
3. 09/30/20 11:16 am
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:16 pm
Stephen Raper (sraper): Approved for Engineering DSCC Chair

Chemical Engineering Economics

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.

Preceded or accompanied by Chem Eng 3130.

Field Trip

Statement

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

Justification for change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (09/28/20 4:04 pm): Rollback: Change in dept chair

Key: 1083

Preview Bridge

Course Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 09/28/20 4:05 pm

Viewing: **CHEM ENG 4100 : Chemical Engineering Laboratory I**

File: 1394.1

Last edit: 09/30/20 11:16 am

Changes proposed by: luksc

Other Courses referencing this course

In The Prerequisites:

CHEM ENG 4110 : Chemical Engineering Process Dynamics And Control

Requested Effective Change Date: **Fall 2021** ~~08/14/2018~~

Department: Chemical and Biochemical Engineering

Discipline: Chemical Engineering (CHEM ENG)

Course Number: 4100

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. 09/28/20 4:04 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
2. 09/30/20 10:55 am

Hu Yang (huyang): Approved for RCHEMENG Chair
3. 09/30/20 11:17 am
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:16 pm
Stephen Raper (sraper): Approved for Engineering DSCC Chair

Chemical Engineering Laboratory I

Abbreviated Course Title: Chemical Engr Lab I

Catalog Description:
Experiments associated with unit operations involving fluid flow and heat transfer. Principles of data and uncertainty analysis are introduced with emphasis on model building. Communication skills are stressed. This is a communication emphasized course.

Prerequisites:
Chem Eng 3100 and Chem Eng 3110.

Field Trip Statement:

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

Required for Majors	No
Elective for Majors	No

Justification for change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (09/28/20 4:04 pm): Rollback: Change in dept chair

Key: 1394

Preview Bridge

Course Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 09/28/20 4:06 pm

Viewing: **CHEM ENG 4120 : Process Dynamics And Control Laboratory**

File: 383.1

Last edit: 09/30/20 11:17 am

Changes proposed by: luksc

Requested Effective Change Date	**Fall 2021** ~~08/14/2018~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4120
Title	
Abbreviated Course Title	Process Control Lab
Catalog Description	
Prerequisites	

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. 09/28/20 4:04 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
2. 09/30/20 10:55 am

Hu Yang (huyang): Approved for RCHEMENG Chair
3. 09/30/20 11:17 am
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:16 pm
Stephen Raper (sraper): Approved for Engineering DSCC Chair

Process Dynamics And Control Laboratory
Application of concepts of industrial process dynamics and control using experiments that demonstrate different control and sensing devices and software.
This is a communications emphasized course.
Preceded or accompanied by Chem Eng 4110.

Field Trip
Statement

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

Justification for change:

Curriculum was revised in 2016. This course is no longer part of the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (09/28/20 4:04 pm): Rollback: Change in dept chair

Key: 383

Preview Bridge

Course Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 09/28/20 4:06 pm

Viewing: **CHEM ENG 4150 : Chemical Process Flowsheeting**

File: 1084.1

Last edit: 09/30/20 11:17 am

Changes proposed by: luksc

Requested Effective Change Date	**Fall 2021** ~~08/14/2018~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4150
Title	
Abbreviated Course Title	Che Process Flowsheeting
Catalog Description	
Prerequisites	

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. 09/28/20 4:04 pm Kristy Giacomelli-Feys (kristyg): Rollback to Initiator
2. 09/30/20 10:55 am

Hu Yang (huyang): Approved for RCHEMENG Chair
3. 09/30/20 11:17 am
Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:16 pm
Stephen Raper (sraper): Approved for Engineering DSCC Chair

Chemical Process Flowsheeting
The development, implementation, and evaluation of methods for determining the mathematical model of a chemical process, ordering the equations in the mathematical model, and solving the model.
Math 3304 or graduate standing.

Field Trip

Statement

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

Justification for change:

This course has been partially incorporated into Chem Eng 3111 and the other parts are in Chem Eng 5150. This course is no longer appropriate

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kristyg (09/28/20 4:04 pm): Rollback: Change in dept chair

Key: 1084

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 09/25/20 3:23 pm

Viewing: **COMP SCI 5407 : Introduction to Virtual Reality**

File: 4740

Last edit: 09/28/20 10:25 am

Changes proposed by: zhupe

Requested Effective Change Date	Fall 2021
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	5407
Title	
Abbreviated Course Title	Intro to VR
Catalog Description	
Prerequisites	
Field Trip Statement	

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. 09/25/20 3:24 pm Samuel Frimpong (frimpong): Approved for RCOMPSCI Chair
2. 09/28/20 10:25 am Marita Tibbetts

(tibbettsmg): Approved for CCC Secretary

3. 10/12/20 2:16 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

Introduction to Virtual Reality

Fundamentals: creative and digital skills. Houdini interface (Scene View, Network, Parameter panes), design facets (networks of nodes, navigation of networks interactive 3D modeling and visualization, digital assets, animation, lights, cameras, rendering), and simple applications of particles, dynamics, and fluids (Shattering, Destruction, Smoke, Fire).

A grade of "C" or better in both Comp Sci 2500 and Math 3108.

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

Justification for new course:

Virtual Reality (VR) is becoming increasingly popular for real-world use in everything ranging from entertainment to emergency & military personnel training to telemedicine. This course fills a void in the CS curriculum to provide the technical foundation for building future VR systems. It will give much needed creative and digital skills to students.

Semesters previously offered as an experimental course

The course was offered in SP2020 and FS2020 as an experimental course. Enrollment was 26 in Sp20 and 15 currently enrolled for FS20. -MT

Co-Listed Courses:

Course Reviewer Comments

Key: 4740

Preview Bridge

Course Change Request

Date Submitted: 09/19/20 7:12 am

Viewing: **COMP SCI 6604 : Mobile, IoT and Sensor Computing ~~Mobile And Sensor Data Management~~**

File: 1909.1

Last edit: 09/29/20 10:18 am

Changes proposed by: zhupe

Programs referencing this course

NET CNS-CT: Cyber Physical Systems CT

NET CNC-CT: Cyber Physical Systems CT

Requested Effective Change Date	**Fall 2021** ~~08/01/2014~~
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	6604
Title	

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. 09/25/20 3:25 pm Samuel Frimpong (frimpong): Approved for RCOMPSCI Chair
2. 09/28/20 10:28 am Marita Tibbetts

(tibbettsmg): Approved for CCC Secretary

3. 10/05/20 2:15 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

Mobile, IoT and Sensor Computing ~~Mobile And Sensor Data Management~~

Abbreviated Course Title	**Mobile,IoT** ~~Mobile~~ & Sensor **Comp** ~~Data Mgt~~

Catalog Description

Architectures of mobile **and wireless** computing systems; **Location** ~~Mobile IP support in mobile computing systems; location~~ data management, Broadcasting **and** ~~and~~ indexing, **replication/caching,** ~~replication control; caching,~~ fault **tolerance; Wireless networks** ~~tolerance and reliability of mobile systems; adhoc~~ and **resource management; Sensor networks and ad hoc routing, wireless network security,** sensor **data security; Internet of Things (IoT); resource management and edge computing, and IoT security.** ~~routing schemes, key management.~~

Prerequisites

Comp Sci **4601 or equivalent.** ~~4601.~~

Field Trip Statement

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

No

Required for Majors	
Elective for Majors	No

Justification for change:

The course content has been updated with the development in the area.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

tibbettsmg (09/28/20 10:28 am): Deadline for Sp21 has passed. Effective date changed to FS21- MT

sraper (09/29/20 10:18 am): Capitalized "Location" in description.

Key: 1909

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 09/02/20 2:02 pm

Viewing: **MATH 6603 : Mathematical Foundations of Finite Element Methods II**

File: 4738

Last edit: 09/04/20 3:48 pm

Changes proposed by: prunnion

Requested Effective Change Date	Spring 2021
Department	Mathematics & Statistics
Discipline	Mathematics (MATH)
Course Number	6603
Title	
Abbreviated Course Title	Finite Elem Methods II
Catalog Description	
Prerequisites	

In Workflow

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

Approval Path

1. 09/02/20 2:50 pm vsam: Approved for RMATHEMA Chair
2. 09/04/20 3:48 pm Marita Tibbetts (tibbettsmg):

	Approved for CCC Secretary 3. 09/28/20 10:33 am Katie Shannon (shannonk): Approved for Sciences DSCC Chair

Mathematical Foundations of Finite Element Methods II

Finite element methods for systems of partial differential equations and nonlinear partial differential equations. Mathematical theory for mixed finite elements, non-conforming finite elements, finite element interpolation, and finite element projections.

Math 5325 or Math 6601 or Math 6602

Field Trip Statement

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

Justification for new course:

This course has been offered twice as an experimental course and leverages the expertise of our faculty.

Semesters previously

offered as an
experimental
course

Spring 2019 enrollment was 5, Spring 2020 enrollment was 4.

Co-Listed
Courses:

Course Reviewer
Comments

Key: 4738

Preview Bridge

Program Change Request

Date Submitted: 09/24/20 9:50 am

Viewing: THEATRE-MI : Theatre Minor

File: 136.1

Last edit: 09/24/20 9:50 am

Changes proposed by: karmannc

Catalog Pages Using this Program
Theatre

Start Term
Spring 2021
Program Code
THEATRE-MI
Department
Arts, Languages, & Philosophy
Title
Theatre Minor

In Workflow

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

Approval Path

1. 04/14/20 10:41 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 04/24/20 9:18 am Kristy Giacomelli-Feys (kristyg): Approved for CCC Secretary
3. 04/24/20 10:15 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair
4. 04/28/20 9:17 am Kristy Giacomelli-Feys (kristyg): Approved for Pending CCC Agenda post
5. 05/06/20 10:32 am Kristy Giacomelli-

Program Requirements and Description

Feys (kristyg): Rollback to Arts & Humanities DSCC Chair for CCC Meeting Agenda

6. 05/06/20 4:28 pm Petra Dewitt (dewittp): Rollback to RPHILOSO Chair for Arts & Humanities DSCC Chair
7. 05/06/20 5:54 pm Audra Merfeld-Langston (audram): Rollback to Initiator
8. 09/24/20 11:37 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
9. 09/24/20 11:49 am Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
10. 09/24/20 2:11 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

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Theatre Minor Curriculum

A minor in Theatre requires a minimum of **15** ~~16~~ hours comprised of the following courses:

Required Courses (6 credits):

Theatre 1150 – Theatre For Social Change (3 credits)

Theatre 2143-Stagecraft (3 credits)

~~THEATRE 1190~~	~~Theatre via Video~~	~~3~~
~~THEATRE 2141~~	~~Acting I~~	~~3~~
~~THEATRE 1142~~	~~Stage Productions, Performers~~	~~1~~

~~or THEATRE 3220~~	~~Theatre Ensemble~~	
~~THEATRE 1143~~	~~Stage Productions, Technicians~~	~~1~~
~~THEATRE 2143~~	~~Stagecraft~~	~~3~~

In addition to the courses listed above, students are ~~the student is~~ required to choose 3 ~~a concentration and complete enough hours from one~~ of the courses below (9 credits): ~~following concentration areas to meet the minimum 16 hours.~~

Theatre 2141 - Acting I (3 credits)

Theatre 3241 - Acting II (3 credits)

Theatre 3243 – Entertainment Design (3 credits)

Theatre 4341 – Directing (3 credits)

~~Acting/Directing~~

~~THEATRE 3241~~	~~Acting II~~	~~3~~
~~THEATRE 4341~~	~~Directing~~	~~3~~
~~THEATRE 3242~~	~~Course THEATRE 3242 Not Found~~	~~3~~
~~or MUSIC 1111~~	~~Individual Music Instruction I~~	

~~Technical Theatre~~

~~THEATRE 3242~~	~~Course THEATRE 3242 Not Found~~	~~3~~
~~THEATRE 3241~~	~~Acting II~~	~~3~~
~~or THEATRE 4341~~	~~Directing~~	

Justification for request

The curriculum for the introductory theatre course needs serious updating, so we are getting rid of Theatre 1190: Theatre via Video and replacing it with Theatre 1150: Theatre for Social Change, which would be a required course for the Theatre Minor. This would put S&T in line with other universities around the country with theatre curriculum offered to non-majors.

The previous Theatre minor requirements were confusing to students. There were two separate concentration areas that overlapped too generally and offered no extreme differences. We want the Theatre minor to be in line with other minors in the department in structure and aesthetic, so we are streamlining the requirements and making it clearer to the students. We believe this small structure change will have positive effects and will be clearer to students wanting to explore theatre during their time at Missouri S&T.

Supporting Documents

Course Reviewer Comments

kristyg (05/06/20 10:32 am): Rollback: Rolla back for course changes.
dewittp (05/06/20 4:28 pm): Rollback: Address the 2201, 3001, and 4001 issue.
audram (05/06/20 5:54 pm): Rollback: A minor can only contain courses with permanent numbers. Faculty needs to revise.

Key: 136

Program Change Request

Date Submitted: 08/27/20 8:54 am

Viewing: GEO SCI-CT : Geoenvironmental Science and Engineering CT

File: 346.8

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

Last edit: 08/28/20 1:41 pm

Changes proposed by: sbrower

Catalog Pages Using this Program
Geological Engineering
Geology and Geophysics

Start Term
Fall **2021** ~~2020~~
Program Code
GEO SCI-CT
Department
Geosciences and Geological and Petroleum Engineering
Title
Geoenvironmental Science and Engineering CT

Program Requirements and Description

In Workflow

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

Approval Path

1. 08/27/20 8:59 am David Borrok (borrokd): Approved for RGEOSENG Chair
2. 08/28/20 1:42 pm Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
3. 09/28/20 10:32 am Katie Shannon (shannonk): Approved for Sciences DSCC Chair

History

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

Geoenvironmental Science and Engineering

The graduate certificate in Geoenvironmental Science and Engineering is designed to provide graduate students with the geoscience and engineering backgrounds they will need to be successful in the geoenvironmental consulting or regulatory fields.

The Geoenvironmental Science and Engineering Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in Geology, Geophysics, Geological Engineering, Civil Engineering, or Biology or 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 Geoenvironmental Science and Engineering Certificate Program will have non-degree graduate status, however, they will earn graduate credit for the courses they complete. If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to the non-thesis M.S. degree program in Geology and Geophysics. 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 Geoenvironmental Science and Engineering Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

One of the following courses is required:		
GEOLOGY 4411	Hydrogeology	3
GEO ENG 5331	Subsurface Hydrology	3
GEO ENG 5332	Fundamentals of Groundwater Hydrology	3
Three of the following courses are required:		
GEOLOGY 4431	Methods Of Karst Hydrogeology	3
GEOLOGY 4451	Aqueous Geochemistry	3
GEOPHYS 5782	Environmental and Engineering Geophysics	3
GEO ENG 5174	Geological Engineering Field Methods	3
GEO ENG 5233	Risk Assessment In Environmental Studies	3
GEO ENG 5235	Environmental Geological Engineering	3
GEO ENG 5237	Geological Aspects Of Hazardous Waste Management	3
GEO ENG 5381	Intermediate Subsurface Hydrology And Contaminant Transport Mechs	3
BIO SCI 6313	Environmental Microbiology	3
BIO SCI 6363	Advanced Freshwater Ecology	3
BIO SCI 6463	Bioremediation	3
ENV ENG 5605	**Environmental Systems Modeling**	**3**
ENV ENG 5635	**Phytoremediation and Natural Treatment Systems: Science and Design**	**3**

ENV ENG 6601	Biological Principles In Environmental Engineering Systems	3

Justification for request

The Geoenvironmental Sciences & Engineering graduate certificate does not currently include environmental engineering graduate courses among its curriculum options. As the offering department, GGPE is adding three environmental engineering graduate courses among the course options in the certificate's curriculum.

Supporting Documents

~~Graduate Certificate in Geoenvironmental Science and Engineering 11 7 2018.pdf~~

~~MDHE approval.pdf~~

Geo Env Sci & Eng Cert Course Add Approval Ltr.pdf

Course Reviewer Comments

tibbettsmg (08/28/20 1:41 pm): updated term to Fall 21

Key: 346

Program Change Request

New Program Proposal

Date Submitted: 10/01/20 2:52 pm

Viewing: PROPOSED : Advanced Materials for Sustainable Infrastructure CT

File: 369

Last edit: 10/01/20 2:52 pm

Changes proposed by: seelyj

Start Term
Fall 2021
Program Code
PROPOSED
Department
Civil, Architectural, and Environmental Engineering
Title
Advanced Materials for Sustainable Infrastructure CT

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 10/01/20 2:44 pm Marita Tibbetts (tibbettsmg): Rollback to Initiator
2. 10/01/20 3:22 pm Joel Burken (burken): Approved for RCIVILEN Chair
3. 10/02/20 6:01 am Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:16 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

(Offered in Civil Engineering Discipline)

Choose four courses with a minimum of two courses from the first group of courses (advanced construction materials) and remaining courses from the second group of courses (electives).

I. Advanced Construction Material Courses:

- Civ Eng 6801: Advanced Concrete Science and Technology
- Civ Eng 5112: Bituminous Materials
- Civ Eng 5113: Composition and Properties of Concrete

II. Related Topics:

- Civ Eng 5231: Infrastructure Strengthening with Composites
- Civ Eng 5118: Smart Materials and Sensors
- Mech Eng 5282: Introduction to Composite Materials and Structures
- Arch Eng 5448: Green Engineering: Analysis of Constructed Facilities

Justification for request
The purpose of the certificate is to provide graduate students in who are interested in careers that are based on sustainable building and transportation infrastructure materials with a formal recognition of
accomplishment in this area. The certificate will help students to enter the CE graduate programs and to make students more marketable in this job sector. The students targeted for this certificate are
primarily off-campus graduate students and be a pathway for the CE MS program within CArEE for
students completing the certificate.
Supporting Documents
Advanced Materials Sustainable Infrastructure CT.pdf
MST PC July 2020.pdf
Course Reviewer Comments
tibbettsmg (10/01/20 2:44 pm): Rollback: to reattach documents

Key: 369

Program Change Request

New Program Proposal

Date Submitted: 10/01/20 2:51 pm

Viewing: PROPOSED : Building Systems Engineering CT

File: 370

Last edit: 10/01/20 2:51 pm

Changes proposed by: seelyj

Start Term
Fall 2021
Program Code
PROPOSED
Department
Civil, Architectural, and Environmental Engineering
Title
Building Systems Engineering CT

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 10/01/20 2:44 pm Marita Tibbetts (tibbettsmg): Rollback to Initiator
2. 10/01/20 3:22 pm Joel Burken (burken): Approved for RCIVILEN Chair
3. 10/02/20 6:02 am Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:16 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

(Offered in Civil Engineering discipline)

ENVIRONMENTAL BUILDING SYSTEM COURSES (Choose TWO courses from the following):

- ARCH ENG 4800: Principles of HVAC 1
- ARCH ENG 4850: Building Electrical Systems
- ARCH ENG 5820: Building Lighting Systems

CONSTRUCTION BUILDING SYSTEM COURSES (Choose ONE courses from the following):

- ARCH ENG 5445: Construction Methods
- ARCH ENG 5449: Engineering and Construction Contract Specifications
- CIV ENG 6442: Construction Administration, Planning and Control
- CIV ENG 6445: Advanced Construction Engineering

BUILDING MANAGEMENT COURSES (Choose ONE courses from the following):

- ENG MGT 5210: Economic Decision Analysis
- ENG MGT 51 11: Management for Engineers and Scientists
- ENG MGT 5320: Project Management
- SYS ENG 5101: System Engineering and Analysis

Justification for request

The purpose of the certificate is to provide graduate students in who are interested in careers that are based on advanced building systems design and construction with a formal recognition of

accomplishment in this area. The certificate will help students to enter the CE graduate programs and to make graduates of the certificate program more marketable in this job sector.

Supporting Documents

Building Systems Engineering CT.pdf

MST PC July 2020.pdf

Course Reviewer Comments

tibbettsmg (10/01/20 2:44 pm): Rollback: attach documents

Key: 370

Program Change Request

New Program Proposal

Date Submitted: 10/01/20 2:47 pm

Viewing: PROPOSED : Surface Water Resources CT

File: 371

Last edit: 10/01/20 2:47 pm

Changes proposed by: seelyj

Start Term
Fall 2021
Program Code
PROPOSED
Department
Civil, Architectural, and Environmental Engineering
Title
Surface Water Resources CT

Program Requirements and 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. Kristy Giacomelli-Feys

Approval Path

1. 10/01/20 2:45 pm Marita Tibbetts (tibbettsmg): Rollback to Initiator
2. 10/01/20 3:22 pm Joel Burken (burken): Approved for RCIVILEN Chair
3. 10/02/20 6:04 am Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
4. 10/12/20 2:16 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

(Offered in Civil Engineering Discipline)

WATER RESOURCES ENGINEERING COURSES (Choose THREE courses from the following):

- CIV ENG 5330 Unsteady Flow Hydraulics
- CIV ENG 5331 Hydraulics of Open Channels
- CIV ENG 5338 Hydrologic Engineering
- CIV ENG 6338 Advanced Hydrology
- CIV ENG 6340 Urban Hydrology

RELATED COURSES (Chose ONE course from the following):

- CIV ENG 5605 Environmental System Modeling
- CIV ENG 5642 Sustainability, Population, Energy, Water, and Materials

Justification for request

The purpose of the certificate is to provide the students in CArEE who are interested in careers in surface water resources engineering a formal recognition of this accomplishment. A certificate in Surface Water Resources will facilitate students to enter the CE graduate program upon completion of the certificate and to give students and advantage when applying for careers in water resources engineering, environmental engineering, water resources management, and other fields. The student targeted for this certificate are primarily off-campus graduate students.

Supporting Documents

Surface Water Resources CT.pdf

MST PC July 2020.pdf

Course Reviewer Comments

tibbettsmg (10/01/20 2:45 pm): Rollback: attached documents

Key: 371

Program Change Request

New Program Proposal

Date Submitted: 09/10/20 10:58 am

Viewing: PROPOSED : UCT - TECHNOLOGY, PHILOSOPHY, AND ETHICAL FUTURES

File: 368

Last edit: 09/10/20 10:58 am

Changes proposed by: gamezp

Start Term
Fall 2021
Program Code
PROPOSED
Department
Arts, Languages, & Philosophy
Title
UCT - TECHNOLOGY, PHILOSOPHY, AND ETHICAL FUTURES

In Workflow

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

Approval Path

1. 09/08/20 7:07 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
2. 09/09/20 7:21 am Marita Tibbetts (tibbettsmg): Rollback to Initiator
3. 09/09/20 3:22 pm Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
4. 09/10/20 7:09 am Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
5. 09/10/20 7:50 am Petra Dewitt (dewittp): Rollback to Initiator

Program Requirements and Description

6. 09/10/20 10:49 am Audra Merfeld-Langston (audram): Rollback to Initiator
7. 09/24/20 11:37 am Audra Merfeld-Langston (audram): Approved for RPHILOSO Chair
8. 09/24/20 11:45 am Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
9. 09/24/20 2:09 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair

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This certificate is designed to help make one an informed citizen, a reflective human being, and a potential difference-maker.

We live in a technological world, with rapid developments in emerging nano-, bio-, and information and communications technology taking place every day. But the very speed of these change can make it difficult to see how we are affected by them. How do new technologies impact our environments, our economies, our lived experiences, and our very selves? How can we, as users, cope with them? Perhaps even more importantly, what sorts of obligations and responsibilities do engineers and technicians, as makers, have to make sure they are safe, healthy, or liberating? Finally, how do we, as persons, understand ourselves as users, makers, and human beings?

These are precisely the sorts of questions that the Certificate in Technology, Philosophy, and Ethical Futures will help one address. Pursuing this course of study will familiarize students not only with the dilemmas, challenges, and opportunities that new technologies present but with the conceptual tools to navigate them, which will serve them well both in industry and in personal life.

REQUIREMENTS:
3 credits from:
PHILOS 1105 – Self and World: An Introduction to Philosophy
PHILOS 1130 – How Should I Live? An Introduction to Ethics

6 credits from:
PHILOS 3225 – Engineering Ethics
PHILOS 4665 – Creating Future Cities
PHILOS 4320 – Minds and Machines
PHILOS 4350 – Environmental Ethics

PSYCH 4710 – Human Factors
PSYCH 4720 - Psychology of Social Technology
HIST 3510 – Twentieth Century Technology and Society
POL SCI 3001 – Policy for Science, Technology, and Innovation

Required capstone course:
PHILOS 4666 – Technology, Ethics, and Philosophy

Justification for request
The purpose of this certificate is to demonstrate to employers and others that the student or recipient has a solid background in both applied ethics and normative theory. Demand for excellence, or at the very least competence, in ethical decision-making is increasing, both in the tech and corporate worlds:

https://qz.com/work/1793582/why-you-should-hire-a-moral-philosopher/
https://qz.com/1734381/why-tech-companies-need-to-hire-philosophers/
https://www.theguardian.com/business-to-business/2018/mar/29/i-work-therefore-i-am-why-businesses-are-hiring-philosophers

Allowing students from STEM disciplines the chance to take a manageable 12-credit certificate in philosophy that will hone these skills will ultimately make them more attractive candidates, standing apart from those who have focused only on technical and/or management skills; moreover, for students primarily studying in the humanities, it provides an explicit area of emphasis on values, tying their studies to concrete cases in the real world.
Supporting Documents
MS&T PC August 2020 (3).pdf
Proposal_Technology, Philosophy, and Ethical Futures (1).pdf
Course Reviewer Comments
tibbettsmg (09/09/20 7:21 am): Rollback: Please submit supporting approval documents. MT
dewittp (09/10/20 7:50 am): Rollback: Roll back, please attach all supporting documents.
audram (09/10/20 10:49 am): Rollback: Please see comments about attaching supporting documents.

Key: 368

Course Change Request

New Experimental Course Proposal

Date Submitted: 09/02/20 1:26 pm

Viewing: **AERO ENG 6001.004 : Computational Plasma Physics and Modern Scientific Programming**

File: 4737

Last edit: 09/08/20 7:26 am

Changes proposed by: nisbett

Requested Effective Change Date	Spring 2021
Department	Mechanical & Aerospace Engineering
Discipline	Aerospace Engineering (AERO ENG)
Course Number	6001
Topic ID	004
Experimental Title	
Experimental Abbreviated Course Title	Computational Plasma Phy
Instructors	Daoru Han

In Workflow

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

Approval Path

1. 09/02/20 1:28 pm J. Keith Nisbett (nisbett): Approved for RMECHENG Chair
2. 09/08/20 7:26 am Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
3. 09/29/20 9:21 am Stephen Raper (sraper):

Approved for Engineering DSCC Chair

Computational Plasma Physics and Modern Scientific Programming

Experimental

Catalog

Description

This course will introduce supercomputing environments and programming elements to solve mathematical problems in science or engineering. Plasma physics problems will be the primary example. Students are encouraged to apply the methods to their own research codes in a course project. The programming methods will use Linux, FORTRAN/C/C++, OpenMP/MPI/CUDA.

Prerequisites

Aero Eng 5570 or Mech Eng 5570 or Phys 4543 or Nuc Eng 4370; Aero Eng 5830 or Mech Eng 5830 or Math 5001 Introduction to Numerical Analysis or similar advanced computational course; programming course in any language; or by approval of instructor.

Field Trip

Statement

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

Total: 3

Justification for new course:

This course provides appropriate background for researchers developing complex simulations using supercomputing environments. Modelling of Plasma Physics is very suitable for this.

Semester(s) previously taught

None

Co-Listed

Courses:

MECH ENG 6001 - Special Topics

Course Reviewer

Comments

Key: 4737

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 06/22/20 12:45 pm

Viewing: **CIV ENG 5001.005 : Water Treatment Challenges: Desalination, Metals, and Water Reuse**

File: 4727

Last edit: 10/02/20 6:16 am

Changes proposed by: tewarisa

Requested Effective Change Date	Spring 2021
Department	Civil, Architectural, and Environmental Engineering
Discipline	Civil Engineering (CIV ENG)
Course Number	5001
Topic ID	005
Experimental Title	
Experimental Abbreviated Course Title	Water Desal & Reuse
Instructors	Sanjay Tewari

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. CAT entry
8. Registrar

Approval Path

1. 10/01/20 3:22 pm Joel Burken (burken): Approved for RCIVILEN Chair
2. 10/02/20 6:17 am Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
3. 10/12/20 2:16 pm Stephen Raper (sraper):

Approved for Engineering DSCC Chair

Water Treatment Challenges: Desalination, Metals, and Water Reuse

Experimental

Catalog

Description

This course will cover physical and chemical processes relevant to the removal of salts, metals, and other contaminants in water. Students will learn the fundamentals of sci. & eng. in the context of separation of pollutants from solutions, and the associated technologies including porous media filtration, membranes, ion-exchange, adsorption, and others.

Prerequisites

Civ Eng 3615 or Env Eng 3615 or Graduate standing.

Field Trip

Statement

No required field trips.

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

Total: 3

Justification for new course:

This course will serve civil engineering as well as environmental engineering students who have gained a good foundational knowledge of water treatment processes. They will be able to apply the knowledge gained in previous courses towards solving specific water treatment challenges such as desalination, treatment of water loaded with metal ions, and water reuse. It will provide them an opportunity to gain specific principles/mechanisms related to these challenges that are usually encountered in industrial wastewater or coastal source water. These topics are gaining importance rapidly and are not covered explicitly in other courses.

Semester(s)
previously taught

N/A

Co-Listed
Courses:

ENV ENG 5001 - Special Topics

Course Reviewer
Comments

Key: 4727

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 10/05/20 11:16 am

Viewing: **COMP SCI 6001.006 : Introduction to Augmented and Virtual Reality**

File: 4741

Last edit: 10/05/20 3:00 pm

Changes proposed by: zhupe

Requested Effective Change Date	Spring 2021
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	6001
Topic ID	006
Experimental Title	
Experimental Abbreviated Course Title	Intro to AR and VR
Instructors	Chaman Sabharwal

In Workflow

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

Approval Path

1. 09/25/20 3:25 pm Samuel Frimpong (frimpong): Approved for RCOMPSCI Chair
2. 09/28/20 10:42 am Marita Tibbetts (tibbettsmg): Rollback to Initiator
3. 10/05/20 2:14 pm Samuel Frimpong

(frimpong): Approved for RCOMPSCI Chair
4. 10/05/20 3:01 pm Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
5. 10/12/20 2:16 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair

Introduction to Augmented and Virtual Reality

Experimental

Catalog

Description

Fundamentals: Creative and digital skills in Augmented and Virtual Reality. Houdini navigation of scene view, network of nodes, parameter panes, design facets (interactive 3D modeling, digital assets, animation, lights, cameras, rendering, visualization), and applications of particles, dynamics, and fluids (Shattering, Destruction, Smoke, Fire).

Prerequisites

A grade of "C" or better in both Comp Sci 2500 and Math 3108, and graduate standing.

Field Trip

Statement

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

Total: 3

Justification for new course:

Augmented and Virtual reality's surge in popularity is relatively new. Augmented and Virtual reality is the next big thing in the technology industry. AR and VR have proved to be breakthrough technologies for a variety of industries. Augmented and Virtual reality technology holds enormous potential to change the future for a number of fields, from medicine, business, architecture to manufacturing.

Semester(s) previously taught

Co-Listed Courses:

Course Reviewer Comments

tibbettsmg (09/28/20 10:42 am): Rollback: Cannot have the same title as proposed CS 5407 course. MT

Key: 4741

Preview Bridge

Course Change Request

New Experimental Course Proposal

Date Submitted: 09/04/20 6:06 pm

Viewing: **MECH ENG 6001.004 : Design for Additive Manufacturing**

File: 4739

Last edit: 09/08/20 7:27 am

Changes proposed by: nisbett

Requested Effective Change Date	Spring 2021
Department	Mechanical & Aerospace Engineering
Discipline	Mechanical Engineering (MECH ENG)
Course Number	6001
Topic ID	004
Experimental Title	
Experimental Abbreviated Course Title	Design for AM
Instructors	Xiangyang Dong

In Workflow

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

Approval Path

1. 09/04/20 6:08 pm J. Keith Nisbett (nisbett): Approved for RMECHENG Chair
2. 09/08/20 7:28 am Marita Tibbetts (tibbettsmg): Approved for CCC Secretary
3. 09/29/20 9:21 am Stephen Raper (sraper):

Approved for Engineering DSCC Chair

Design for Additive Manufacturing

Experimental

Catalog

Description

This course covers the fundamentals of design and process selections for typical additive manufacturing methods, including structural design, material selections, process simulations, and economic analysis. The students will use computer tools and laboratory experiments for multi-scale structural design, multi-material design, and performance analysis.

Prerequisites

Mech Eng 3653 or equivalent

Field Trip

Statement

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

Justification for new course:

This is an important topic in a rapidly developing area of manufacturing.

Semester(s) previously taught

None

Co-Listed Courses:

Course Reviewer Comments

Key: 4739

Preview Bridge