



Minutes of the Campus Curricula Committee Meeting
October 28, 2020
8:15am, Virtual Zoom
(For Faculty Senate Meeting of November 19, 2020)

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

The following curriculum forms were discussed and approved:

Course Change Forms:

File: 4219.12 ARCH ENG 4850 : Building Electrical Systems
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

Program Change Forms:

File: 346.8 GEO SCI-CT : Geoenvironmental Science and Engineering CT

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 Manufacturing

Forms referred back for additional review and edits:

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: 136.1 THEATRE-MI : Theatre Minor
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

The meeting adjourned at 8:53am.

A handwritten signature in black ink that reads "Stephen A. Raper".

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

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 Fall **2021** ~~2019~~

Effective Change

Date

Department

Civil, Architectural, and Environmental Engineering

Discipline

Architectural Engineering (ARCH ENG)

Course Number 4850

Title

Abbreviated Bldg Elect Syst

Course Title

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):

Catalog Description				Approved for CCC Secretary
Prerequisites				3. 10/12/20 2:15 pm Stephen Raper (sraper): Approved for Engineering DSCC Chair
Field Trip Statement				4. 10/13/20 8:10 am Marita Tibbetts (tibbettsmg): Approved for Pending CCC Agenda post
Credit Hours	LEC: 3	LAB: 0	IND: 0	5. 10/28/20 9:36 am Marita Tibbetts (tibbettsmg): Approved for CCC Meeting Agenda
RSD: 0	Total: 3			6. 10/28/20 9:57 am Stephen Raper (sraper): Approved for Campus Curricula Committee Chair
Required for Majors	Yes No			
Elective for Majors	No Yes			
Justification for change:				
Semesters previously offered as an experimental course				
Co-Listed Courses:				
Course Reviewer Comments				

Key: 4219

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

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.

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

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.

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 Fall 2021

Effective Change

Date

Department

Computer Science

Discipline

Computer Science (COMP SCI)

Course Number 5407

Title

Abbreviated Intro to VR

Course Title

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
4. 10/13/20 8:21 am
Marita Tibbetts
(tibbettsmg):
Approved for
Pending CCC
Agenda post
5. 10/28/20 9:37 am
Marita Tibbetts
(tibbettsmg):
Approved for CCC
Meeting Agenda
6. 10/28/20 9:57 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee 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	LEC: 3	LAB: 0	IND: 0	RSD: 0
Total: 3				
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 **Fall 2021 08/01/2014**

Effective Change

Date

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
- 4. 10/13/20 8:22 am
Marita Tibbetts
(tibbettsmg):
Approved for Pending CCC Agenda post
- 5. 10/28/20 9:37 am
Marita Tibbetts
(tibbettsmg):
Approved for CCC Meeting Agenda
- 6. 10/28/20 9:57 am
Stephen Raper
(sraper):
Approved for Campus Curricula Committee Chair

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

Abbreviated **Mobile, IoT** ~~Mobile~~ & Sensor
 Course Title **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	LEC: 3	LAB: 0	IND: 0	RSD: 0
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Total: 3

Required for	No
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Majors

Elective for	No
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Majors

Justification for
change:

The 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: prunion

Requested Spring 2021

Effective Change

Date

Department

Mathematics & Statistics

Discipline

Mathematics (MATH)

Course Number 6603

Title

Abbreviated Finite Elem Methods II

Course Title

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
4. 10/13/20 8:23 am
Marita Tibbetts
(tibbettsmg):
Approved for
Pending CCC
Agenda post
5. 10/28/20 9:37 am
Marita Tibbetts
(tibbettsmg):
Approved for CCC
Meeting Agenda
6. 10/28/20 9:57 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee 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	LEC: 3	LAB: 0	IND: 0	RSD: 0
Total: 3				
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: 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](#)

In Workflow

1. **RGEOENG 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**

Start Term

Fall **2021** ~~2020~~

Program Code

GEO SCI-CT

Department

Geosciences and Geological and Petroleum Engineering

Title

Geoenvironmental Science and Engineering CT

Approval Path

1. 08/27/20 8:59 am
David Borrok (borrokd): Approved for RGEOENG 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
4. 10/13/20 8:27 am
Marita Tibbetts (tibbettsmg): Approved for Pending CCC Agenda post

Program Requirements and Description

- 10/28/20 10:03 am
Marita Tibbetts
(tibbetmsg):
Approved for CCC
Meeting Agenda
- 10/28/20 10:54 am
Stephen Raper
(sraper): Approved
for Campus
Curricula
Committee Chair

History

- 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

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 Spring 2021

Effective Change

Date

Department

Mechanical & Aerospace Engineering

Discipline

Aerospace Engineering (AERO ENG)

Course Number 6001

Topic ID 004

Experimental

Title

Experimental Computational Plasma Phy

Abbreviated

Course Title

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
4. 10/13/20 8:06 am
Marita Tibbetts
(tibbettsmg):
Approved for
Pending CCC
Agenda post
 5. 10/28/20 9:37 am
Marita Tibbetts
(tibbettsmg):
Approved for CCC
Meeting Agenda
 6. 10/28/20 9:57 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee Chair
 7. 10/28/20 10:40
am
Marita Tibbetts
(tibbettsmg):
Approved for CAT
entry

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

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 Spring 2021

Effective Change

Date

Department

Civil, Architectural, and Environmental Engineering

Discipline

Civil Engineering (CIV ENG)

Course Number 5001

Topic ID 005

Experimental

Title

Experimental Water Desal & Reuse

Abbreviated

Course Title

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
4. 10/13/20 8:07 am
Marita Tibbetts
(tibbettsmg):
Approved for
Pending CCC
Agenda post
 5. 10/28/20 9:39 am
Marita Tibbetts
(tibbettsmg):
Approved for CCC
Meeting Agenda
 6. 10/28/20 9:57 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee Chair
 7. 10/28/20 10:47
am
Marita Tibbetts
(tibbettsmg):
Approved for CAT
entry

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

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: 10/28/20 9:40 am

Changes proposed by: zhupe

Requested Spring 2021

Effective Change

Date

Department

Computer Science

Discipline

Computer Science (COMP SCI)

Course Number 6001

Topic ID 006

Experimental

Title

Experimental Intro to AR and VR

Abbreviated

Course Title

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

<p>Experimental Catalog Description Prerequisites Field Trip Statement Credit Hours LEC: 3 LAB: 0 IND: 0 RSD: 0 Total: 3</p>	<p>(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</p>
<p>Justification for new course: Semester(s) previously taught Co-Listed Courses:</p>	<p>(sraper): Approved for Engineering DSCC Chair 6. 10/13/20 8:20 am Marita Tibbetts (tibbettsmg):</p>
<p>Course Reviewer Comments</p>	<p>Approved for Pending CCC Agenda post 7. 10/28/20 9:40 am Marita Tibbetts (tibbettsmg): Approved for CCC Meeting Agenda 8. 10/28/20 9:57 am Stephen Raper (sraper): Approved for Campus Curricula Committee Chair 9. 10/28/20 12:01 pm</p>

Key: 4741

Marita Tibbetts }
(tibbettsmg): }
Approved for CAT }
entry }

Introduction to Augmented and Virtual Reality

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).

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

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.

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

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 Spring 2021

Effective Change

Date

Department

Mechanical & Aerospace Engineering

Discipline

Mechanical Engineering (MECH ENG)

Course Number 6001

Topic ID 004

Experimental

Title

Experimental Design for AM

Abbreviated

Course Title

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

4. 10/13/20 8:08 am
Marita Tibbetts
(tibbettsmg):
Approved for
Pending CCC
Agenda post
5. 10/28/20 9:40 am
Marita Tibbetts
(tibbettsmg):
Approved for CCC
Meeting Agenda
6. 10/28/20 9:57 am
Stephen Raper
(sraper):
Approved for
Campus Curricula
Committee Chair
7. 10/28/20 12:04
pm
Marita Tibbetts
(tibbettsmg):
Approved for CAT
entry

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](#)