Minutes of the Campus Curricula Committee Meeting
August 18, 2015
2:30 p.m., Room 110H Bertelsmeyer Hall

Attendees: Kaylon Buckner, Barry Flachsbart, Petra DeWitt, Kristy Giacomelli, Ilene Morgan, Steve Raper, and Thomas Schuman.

Guest: Steven Corns

Prerequisites and Graduate Faculty Proclamations were discussed. Steven Corns was present to discuss the Graduate Faculty proclamations.

The following curriculum forms were discussed and approved:

Degree Change Forms:

File #143.13
File #153.26
File #152.14
File #108.1

Course Change Forms:

File #4219
File #2267.1
File #1759.1
File #1098.1
File #4205
File #180.3
File #705.1
File #2076.1
File #958.1
File #1281.1
File #2465.1
File #4189
File #2185.4
File #2069.1
File #4231
File #1885.1
File #195.1
File #2375.2
File #2280.1
File #904.1
File #2530.1
File #486.1
File #1466.1
File #1171.1
File #1975.1
File #1754.1

File #4228 was tabled pending further review.

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Experimental Course Forms:

File #4215
File #4210
File #1471.1
File #4233
File #4230
File #4218
File #4217
File #4212
File #4213
File #4237
File #4216

The meeting adjourned at 4:05 p.m.

Ilene Morgan, Chair
Missouri S&T Campus Curricula Committee

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Program Change Request

Date Submitted: 06/09/15 2:48 pm

Viewing: ARC ENG-BS : Architectural Engineering BS

File: 143.13

Last approved: 01/30/15 8:50 am

Last edit: 08/19/15 11:23 am

Changes proposed by: baur

Catalog Pages Using this Program

Architectural Engineering

Start Term	Fall **2016** ~~2015~~
Program Code	ARC ENG-BS
Department	Civil, Architectural, and Environmental Engineering
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. kristyg

Approval Path

1. 06/09/15 4:40 pm wschon: Approved for RCIVILEN Chair
2. 06/10/15 12:00 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 06/29/15 9:47 am sraper: Approved for Engineering DSCC Chair
4. 07/29/15 10:28 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:23 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:44 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Sep 27, 2013 by lahne
2. Sep 27, 2013 by lahne
3. Apr 28, 2014 by lahne
4. Aug 4, 2014 by pantaleoa
5. Jan 30, 2015 by baur

Architectural Engineering BS

Program Requirements and Description

Architectural Engineering
Bachelor of Science

Entering freshmen desiring to study Architectural Engineering will be admitted to the Freshman Engineering Program. They will, however, be permitted, if they wish, to state a Architectural 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 Architectural Engineering a minimum of **129** ~~128~~ 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 Architectural 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 (preferred), HISTORY 1300, or HISTORY 1310. The economics course may be either ECON 1100 or ECON 1200. The humanities course must be selected from the approved lists for art, English, foreign languages, music, philosophy, speech and media studies, or theater.
2. Depth requirement. Three credit hours must be taken in humanities or social sciences at the 2000-level or above and must be selected from "The Approved List of Humanities and Social Science Courses for Engineering Degrees" maintained by the Office of Undergraduate Studies. 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 4000-level. 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 from the list of approved humanities/social sciences courses and may include one communications course in addition to ENGLISH 1120.
4. Any specific departmental requirements in the general studies area must be satisfied.
5. Special topics and special problems and honors seminars are allowed only by petition to and approval by the student's

department chair.

The Architectural 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.

Free Elective Footnote:

Each student is required to take three hours of free elective in consultation with his/her academic advisor. Credits which do not count towards this requirement are deficiency courses (such as algebra and trigonometry), and extra credits in required courses. Any courses outside of Engineering and Science must be at least three credit hours.

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
CHEM 1100	1	MATH 1215	4
FR ENG 1100[2]	1	General Ed Elective[1]	3
MATH 1214	4	MECH ENG 1720	3
ENGLISH 1120	3	PHYSICS 1135	4
General Ed Elective[1]	3		
CHEM 1310 & CHEM 1319	5		
	17		14
Sophomore Year			
First Semester	**Credits**	**Second Semester**	**Credits**
CIV ENG 2200[2]	3	STAT 3113	3
MATH 2222	4	CIV ENG 2210[2]	3
PHYSICS 2135	4	CIV ENG 2211	1
CIV ENG 2401[2]	3	ARCH ENG 2103	3
ARCH ENG 2003	3	ART 3203	3
		MATH 3304	3
		MECH ENG 2350	2
	17		18
Junior Year			
First Semester	**Credits**	**Second Semester**	**Credits**
ARCH ENG 3201[2]	3	ARCH ENG 3805	3
CIV ENG 3330[2]	3	ARCH ENG 5872	3
~~ELEC ENG 2800~~	~~3~~	CIV ENG 3116	3
MECH ENG 2527	3	HISTORY 2510	3
ARCH ENG 3803	**3**	ARCH ENG 3220	3

ARCH ENG 3804	3		
CIV ENG 3715	3		
	18		15

Senior Year

First Semester	Credits	Second Semester	Credits
ARCH ENG 4010	1	ARCH ENG 4097	3
ARCH ENG 3210	3	ARCH ENG Technical Elective[3,4]	3
ARCH ENG 4448	3	CIV ENG 4729	3
HISTORY 3550	3	General Education Elective[1]	3
ARCH ENG Technical Elective[3,4]	3	Basic Science Elective[5]	3
ENG MGT 1210	2		
	15		15
Total Credits: 129			

1	All general education electives must be approved by the student's advisor. Students must comply with the general education requirements with respect to selection and depth of study. These requirements are specified in the current catalog.
2	A grade of 'C' or better required to satisfy graduation requirements.
3	A grade of 'C' or better may be required in ARCH ENG technical elective prerequisite courses. Refer to the Missouri S&T undergraduate catalog for this prerequisite information.
4	Choose technical electives from approved lists under Emphasis Areas for Architectural Engineering Students. A maximum of 3 credits of independent study (ARCH ENG 5000 or ARCH ENG 4099) may be used as a technical elective. Additional independent study course may be taken but will not count towards the B.S. Architectural Engineering degree.
5	Each student is required to take three hours of basic science electives in consultation with his/her academic advisor. A list of basic science courses is provided in the advising office in BCH 119.

Note: All Architectural Engineering students must take the Fundamentals of Engineering examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree, however, it is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process as described in Assessment Requirements found elsewhere in this catalog. Students must sign a release form giving the University access to their Fundamentals of Engineering Examination score.

Emphasis Areas and Course Listings by Area for Architectural Engineering Students

Area I, Structural Engineering

ARCH ENG 5001	Special Topics	6
ARCH ENG 5203	Applied Mechanics In Structural Engineering	3
ARCH ENG 5205	Structural Analysis II	3
ARCH ENG 5260	Analysis And Design Of Wood Structures	3
ARCH ENG 5207	Computer Methods of Structural Analysis	3

ARCH ENG 5210	Advanced Steel Structures Design	3
ARCH ENG 5220	Advanced Concrete Structures Design	3
ARCH ENG 5222	Prestressed Concrete Design	3
ARCH ENG 5729	Foundation Engineering II	3
ARCH ENG 5231	Infrastructure Strengthening with Composites	3
ARCH ENG 5206	Low-Rise Building Analysis And Design	3
ARCH ENG 5208	Structural Dynamics	3

Area II, Construction Engineering and Project Management

ARCH ENG 5442	Construction Planning and Scheduling Strategies	3
ARCH ENG 5445	Construction Methods	3
ARCH ENG 5446	Management Of Construction Costs	3
ARCH ENG 5448	Green Engineering: Analysis of Constructed Facilities	3
ARCH ENG 5449	Engineering and Construction Contract Specifications	3
ENG MGT 5110	Managerial Decision Making	3
ENG MGT 5613	Value Analysis	3
ENG MGT 5711	Total Quality Management	3

Area III, Environmental Systems for Buildings

ARCH ENG 5001	Special Topics	0-6
ARCH ENG 5642	Sustainability, Population, Energy, Water, and Materials	3
ARCH ENG 5665	Indoor Air Pollution	3
ARCH ENG 5850	Residential Renewable Energy Systems	3
ENG MGT 5513	Energy and Sustainability Management Engineering	3

Mechanical Emphasis Courses

MECH ENG 5309	Engineering Acoustics I	3
MECH ENG 5566	Solar Energy Technology	3
MECH ENG 5575	Mechanical Systems For Environmental Control	3

Electrical Emphasis Courses

ELEC ENG 3340	Controllers For Factory Automation	3
ELEC ENG 5150	Photovoltaic Systems Engineering	3
COMP ENG 2210 & COMP ENG 2211	Introduction to Digital Logic and Computer Engineering Laboratory	4

Area IV, Construction Materials

ARCH ENG 5203	Applied Mechanics In Structural Engineering	3

CIV ENG 5113	Composition And Properties Of Concrete	3
CIV ENG 5118	Smart Materials And Sensors	3
CIV ENG 5156	Concrete Pavement Design	3
CER ENG 5810	Principles Of Engineering Materials	3

Architectural Engineering Courses

ARCH ENG 2103	Architectural Materials And Methods Of Construction	3
ARCH ENG 3804	Architectural Design II	3
ARCH ENG 3805	Building Lighting Systems	3
ART 3203	Architectural Design I	3

Architectural Engineering Courses (cross–list with existing civil engineering courses)

ARCH ENG 2003	Engineering Communications	2
ARCH ENG 2001	Special Topics	0-6
ARCH ENG 3000	Special Problems	1-6
ARCH ENG 3001	Special Topics	0-6
ARCH ENG 2002	Cooperative Engineering Training	1
ARCH ENG 4010	Senior Seminar: Engineering In A Global Society	1
ARCH ENG 3201	Structural Analysis I	3
ARCH ENG 3210	Structural Design in Metals	3
ARCH ENG 3220	Reinforced Concrete Design	3
ARCH ENG 4447	Ethical, Legal and Professional Engineering Practice	2
ARCH ENG 4448	Fundamentals Of Contracts And Construction Engineering	3
ARCH ENG 4097	Senior Design Project	3
ARCH ENG 5000	Special Problems	6
ARCH ENG 5001	Special Topics	6
ARCH ENG 5205	Structural Analysis II	3
ARCH ENG 5260	Analysis And Design Of Wood Structures	3
ARCH ENG 5207	Computer Methods of Structural Analysis	3
ARCH ENG 5210	Advanced Steel Structures Design	3
ARCH ENG 5220	Advanced Concrete Structures Design	3
ARCH ENG 5222	Prestressed Concrete Design	3
ARCH ENG 5445	Construction Methods	3
ARCH ENG 5446	Management Of Construction Costs	3
ARCH ENG 5449	Engineering and Construction Contract Specifications	3
ARCH ENG 5231	Infrastructure Strengthening with Composites	3

ARCH ENG 4099	Undergraduate Research	6

Civil Engineering Courses (required courses, emphasis area, and/or technical electives)

CIV ENG 3715	Fundamentals of Geotechnical Engineering	3
CIV ENG 3116	Construction Materials, Properties And Testing	3
CIV ENG 4729	Foundation Engineering	3
CIV ENG 3330	Engineering Fluid Mechanics	3
CIV ENG 5113	Composition And Properties Of Concrete	3
CIV ENG 5117	Asphalt Pavement Design	3
CIV ENG 5729	Foundation Engineering II	3
CIV ENG 5441	Professional Aspects Of Engineering Practice	3
CIV ENG 5445	Construction Methods	3
CIV ENG 5446	Management Of Construction Costs	3
CIV ENG 5449	Engineering and Construction Contract Specifications	3

Justification for request

CC form for CivE / ArchE 2003 necessitates the change from 128 to 129 hrs.

An additional modification during the Junior year with first semester replacing the EE 2800 course with ArchE 3803 Building Electrical Systems course and modifying the course formerly known as ArchE 3805 Building Electrical and Lighting Systems course to ArchE 3805 Building Lighting Systems course. A CC form for both courses (ArchE 3803 and 3805) are being submitted simultaneously.

Supporting Documents

~~Possible Basic Science Courses.docx~~

Course Reviewer Comments

wschon (02/26/15 6:34 pm): Approved.
kleb6b (06/09/15 2:28 pm): Rollback: Rollback per Dr. Baur
sraper (06/29/15 9:47 am): changed effective date to FS 2016
kleb6b (08/19/15 11:23 am): Update AE 3803 hours

Key: 143

Preview Bridge

Program Change Request

Date Submitted: 02/06/15 8:39 am

Viewing: CP ENG-BS : Computer Engineering BS

File: 153.26

Last approved: 08/13/14 4:16 pm

Last edit: 07/15/15 12:38 pm

Changes proposed by: kleb6b

Catalog Pages Using this Program
Computer Engineering

Start Term	Fall **2016** ~~2014~~
Program Code	CP ENG-BS
Department	Electrical and Computer Engineering
Title	

In Workflow

1. stanleyj
2. RELECENG 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. kristyg

Approval Path

1. 02/06/15 3:27 pm Stanley (stanleyj): Approved for stanleyj
2. 02/06/15 4:47 pm Daryl Beetner (daryl): Approved for RELECENG Chair
3. 02/09/15 9:24 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
4. 02/17/15 10:07 am sraper: Approved for Engineering DSCC Chair
5. 03/05/15 3:43 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
6. 04/07/15 10:17 am Kaylon Buckner (kleb6b): Approved

for CCC Meeting Agenda
7. 04/10/15 9:02 am Kaylon Buckner (kleb6b): Rollback to stanleyj for Campus Curricula Committee Chair
8. 05/12/15 8:58 am Stanley (stanleyj): Approved for stanleyj
9. 05/12/15 9:37 am Daryl Beetner (daryl): Approved for RELECENG Chair
10. 05/12/15 9:38 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
11. 06/23/15 10:31 am sraper: Approved for Engineering DSCC Chair
12. 07/15/15 1:34 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
13. 08/19/15 10:44 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
14. 08/19/15 12:45 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Aug 6, 2014 by Stanley (stanleyj)
2. Aug 13, 2014 by pantaleoa

Computer Engineering BS

Program Requirements and Description

Bachelor of Science Computer Engineering[1]

Entering freshmen desiring to study Computer Engineering will be admitted to the Freshman Engineering Program. They will be permitted to state a Computer 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 Computer Engineering a minimum of 128 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 Computer 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 . The history course is to be selected from HISTORY 1200, HISTORY 1300, HISTORY 1310, or **POL SCI 1200.** ~~POL SCI 1200.~~ The economics course may be either **ECON 1100** ~~ECON 1100~~ or ECON 1200. The humanities course must be selected from the approved lists for art, English, foreign languages, music, philosophy, speech and media studies, or theater.
2. Depth requirement. Three credit hours must be taken in humanities or social sciences at the 2000 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 4000 level. 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 from the list of approved humanities/social sciences courses and may include one communications course in addition to ENGLISH 1120.
4. Any specific departmental requirements in the general studies area must be satisfied.
5. Special topics and special problems and honors seminars are allowed only by petition to and approval by the student's department chairman.

The Computer 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. These interrelations are presented and discussed through classroom and laboratory instruction.

Free Electives Footnote:

Each student is required to take **three** ~~five~~ hours of free electives in consultation with his/her academic advisor. Credits which do not count towards this requirement are deficiency courses (such as algebra and trigonometry), and extra credits in required courses. Any courses outside of engineering and science must be at least three credit hours.

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
FR ENG 1100[2]	1	MECH ENG 1720	3
MATH 1214[3]	4	MATH 1215[3]	4
CHEM 1310	4	PHYSICS 1135[3,4]	4

CHEM 1319	1	ECON 1100 or 1200	3
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3	Elective-Hum or Soc (any level)[5]	3
ENGLISH 1120	3		
	16		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
ELEC ENG 2100[3,6,7]	3	COMP ENG 2210[3,6,8]	3
ELEC ENG 2101[3,6]	1	COMP ENG 2211[3,6]	1
MATH 2222[3]	4	ELEC ENG 2120[3,7,9]	3
COMP SCI 1570[3]	3	MATH 3304[3]	3
COMP SCI 1580[3]	1	COMP SCI 1510[3]	3
PHYSICS 2135[3,4]	4	COMP SCI 1200[3]	3
	16		16

Junior Year

First Semester	Credits	Second Semester	Credits
COMP ENG 3110	3	COMP ENG Elective A[3,14]	3
COMP ENG 3150	3	ELEC ENG 3410[3,6,9]	3
COMP ENG 3551[3,6,8]	1	COMP SCI 3800[3]	3
ELEC ENG 2200[3,6,7]	3	STAT 3117[12]	3
ELEC ENG 2201[3,6,7]	1	~~ENGLISH 3560[13]~~	~~3~~
Mathematics Elective[10]	3	**Communication Elective [13]**	**3**
~~SP&M S 1185~~	~~3~~		
SP&M S 1185	**3**		
	17		15

Senior Year

First Semester	Credits	Second Semester	Credits
COMP ENG 5410 or COMP SCI 5600[3]	3	COMP ENG Elective D[3,15,16]	3
COMP ENG Elective C[3,15,16]	3	COMP ENG Elective E[3,15,16]	3
COMP ENG 4096[3,17]	1	COMP ENG 4097[3,17]	3
Elective-Hum or Soc (any level)[5]	3	Elective-Hum or Soc (upper level)[5]	3
Engineering Science Elective [11]	3	Free Elective[18]	3
COMP ENG Elective B[3,19]	3		
	16		15
Total Credits: 128			

Notes: Student must satisfy the common engineering freshman year requirements and be admitted into the department.

1	The minimum number of hours required for a degree in Computer Engineering is 128.
2	Students that transfer to Missouri S&T after their freshman year are not required to enroll in Freshman Engineering Seminars.
3	A minimum grade of "C" must be attained in MATH 1214, MATH 1215, MATH 2222, and MATH 3304, PHYSICS 1135 and PHYSICS 2135 (or their equivalents), COMP SCI 1570, COMP SCI 1580, COMP SCI 1510, COMP SCI 1200, COMP SCI 3800, COMP ENG 2210, COMP ENG 2211, COMP ENG 3150, COMP ENG 3551, COMP ENG 3110, COMP ENG 5410 or COMP SCI 5600, COMP ENG 4096, and ELEC ENG 2100, ELEC ENG 2101, ELEC ENG 2120, ELEC ENG 2200, ELEC ENG 2201, ELEC ENG 3410, and ELEC ENG 3411, and the COMP ENG electives A, B, C, D and E. Also, students may not enroll in other courses that use these courses as prerequisites until the minimum grade of "C" is attained.
4	Students may take PHYSICS 1111 and PHYSICS 1119 in place of PHYSICS 1135. Students may take PHYSICS 2111 and PHYSICS 2119 in place of PHYSICS 2135.
5	All electives must be approved by the student's advisor. Students must comply with the general education requirements with respect to selection and depth of study. These requirements are specified in the current catalog.
6	Students who drop a lecture course prior to the deadline to drop a class must also drop the corequisite lab course.
7	Students must earn a passing grade on the ELEC ENG Advancement Exam I (associated with ELEC ENG 2100) before they enroll in ELEC ENG 2120 or ELEC ENG 2200 and ELEC ENG 2201.
8	Students must earn a passing grade on the COMP ENG Advancement Exam (associated with COMP ENG 2210) before they enroll in any course with COMP ENG 2210 and COMP ENG 2211 as prerequisites.
9	Students must earn a passing grade on the ELEC ENG Advancement Exam II (associated with ELEC ENG 2120) before they enroll in ELEC ENG 3410 and ELEC ENG 3411.
10	Students must take one of the following courses: MATH 3103, MATH 3108, MATH 3109, MATH 5302, MATH 5603, MATH 5105, MATH 5106, MATH 5107, MATH 5108, MATH 4209, MATH 4211, MATH 5215, MATH 5222, MATH 5325, MATH 4530, MATH 5737, MATH 5351, MATH 5154, MATH 4096, MATH 5483, MATH 5585, STAT 5644, STAT 5346, STAT 5353.
11	Students must take MECH ENG 2340, MECH ENG 2519, MECH ENG 2527, PHYSICS 2311, PHYSICS 2401, CHEM 2210, BIO SCI 2213, or BIO SCI 2223. The following pairs of course are substitutions for any single course: CIV ENG 2200 and MECH ENG 2350, PHYSICS 2305 and PHYSICS 4311, PHYSICS 2305 and CER ENG 4240, or PHYSICS 2305 and NUC ENG 3205.
12	Students may replace STAT 3117 with STAT 3115 or STAT 5643.
13	Student must take English 3560 or English 1160.
14	Comp Eng Elective A must be a 4000 or 5000-level Comp Eng, Elec Eng, or Comp Sci course with at least a 3-hour lecture component. This normally includes all Comp Eng and Elec Eng 4000 or 5000-level courses except Comp Eng or Elec Eng 4000, 4099, 4096, and 4097 or Comp Sci 5000, 4010, 5600, and 4099.
15	Comp Eng Electives C, D, and E must be 3000, 4000 or 5000-level courses from an approved list of science, mathematics, and engineering courses. In particular, this list includes all 3000, 4000 or 5000-level Comp Eng, Elec Eng and Comp Sci courses except required courses in Comp Eng, Elec Eng, and Comp Sci and except Comp Eng 4096 and 4097, Elec Eng 2800, 1002, 1003, 4096, and 4097, and Comp Sci 2002 and 4600/5600). Comp Eng Electives C, D, and E must include at least six hours of engineering or computer science courses.

16	COMP ENG Electives C, D, and E cannot include more than three hours of COMP ENG 4000, COMP ENG 4099, ELEC ENG 4000, or ELEC ENG 4099.
17	Students pursuing dual degrees in COMP ENG and ELEC ENG may take either COMP ENG 4096 or ELEC ENG 4096 and COMP ENG 4097 or ELEC ENG 4097. Students may not receive credit for both COMP ENG 4096 and ELEC ENG 4096 or COMP ENG 4097 and ELEC ENG 4097 in the same degree program.
18	Students are required to take at least three credit hours. Elec Eng 2800 level, ELEC ENG 4096, ELEC ENG 4097, COMP ENG 4096 and COMP ENG 4097 may not be used for free electives. No more than one credit hour of COMP ENG 3002 or ELEC ENG 3002 may be applied to the BS degree for free electives.
19	Comp Eng Elective B must be a 4000 or 5000 level COMP ENG course with at least a 3-hour lecture component, excluding COMP ENG 4096 and COMP ENG 4097.

Emphasis Areas for Computer Engineering

Note: The following emphasis areas identify courses from which a student may opt to develop a specific emphasis. It is not required that students obtain an emphasis specialty within computer engineering.

Computational Intelligence

Highly Recommended		
COMP ENG 5310	Computational Intelligence	3
ELEC ENG 5370	Introduction To Neural Networks & Applications	3
Suggested		
ELEC ENG 5330	Fuzzy Logic Control	3

Computers and Architecture

Highly Recommended		
~~COMP ENG 4160~~	~~Course COMP ENG 4160 Not Found~~	~~3~~
COMP ENG 5160	**Embedded Processor System Design**	**3**
COMP ENG 5120	Digital Computer Design	3
COMP ENG 5170	Real-Time Systems	3
COMP ENG 5510	Fault-Tolerant Digital Systems	3
Suggested		
COMP ENG 5610	Real-Time Digital Signal Processing	3
COMP ENG 5130	Advanced Microcomputer System Design	3
ELEC ENG 3320	Control Systems	3
ELEC ENG 3100	Electronics I	3
COMP SCI 3100	Software Engineering I	3
~~COMP ENG 4151~~	~~Course COMP ENG 4151 Not Found~~	~~3~~
COMP ENG 5151	**Digital Systems Design Laboratory**	**3**

Embedded Computer Systems

Highly Recommended		
~~COMP ENG 4151~~	~~Course COMP ENG 4151 Not Found~~	
~~COMP ENG 4160~~	~~Course COMP ENG 4160 Not Found~~	
COMP ENG 5170	Real-Time Systems	3
COMP ENG 5151	**Digital Systems Design Laboratory**	**3**
COMP ENG 5160	**Embedded Processor System Design**	**3**
Suggested		
COMP ENG 5610	Real-Time Digital Signal Processing	3
ELEC ENG 3320	Control Systems	3
ELEC ENG 3100	Electronics I	3
COMP SCI 3100	Software Engineering I	3

Integrated Circuits and Logic Design

Highly Recommended		
COMP ENG 5210	Introduction To VLSI Design	3
COMP ENG 5220	Digital System Modeling	3
Suggested		
ELEC ENG 3100	Electronics I	3
~~COMP ENG 4151~~	~~Course COMP ENG 4151 Not Found~~	~~3~~
COMP ENG 5110	Principles of Computer Architecture	3
COMP ENG 5151	**Digital Systems Design Laboratory**	**3**
COMP ENG 5120	Digital Computer Design	3
COMP ENG 5130	Advanced Microcomputer System Design	3
COMP ENG 5510	Fault-Tolerant Digital Systems	3

Networking and Software Engineering

Highly Recommended		
COMP ENG 5450	Digital Image Processing	3
COMP ENG 5460	Machine Vision	3
COMP ENG 5430	Wireless Networks	3
COMP ENG 5420	Introduction to Network Security	3
Suggested		
COMP ENG 5110	Principles of Computer Architecture	3
COMP SCI 3100	Software Engineering I	3
~~IS&T 4641~~	~~Electronic and Mobile Commerce~~	~~3~~
IS&T 4641	**Electronic and Mobile Commerce**	**3**

Security and Reliability

Highly Recommended		
COMP ENG 5110	Principles of Computer Architecture	3
COMP ENG 5420	Introduction to Network Security	3
Suggested		
COMP ENG 5310	Computational Intelligence	3

Justification for request

The Communication Elective formalizes the current technical writing requirement for the Computer Engineering B.S. degree program that requires students to take English 3560 or English 1160 (currently given in footnote 13 which states that “Student must take English 3560 or English 1160.”). Formalizing the current technical writing requirement also addresses, in part, ABET reviewer comments about clarifying the technical writing requirement in the Computer Engineering B.S. degree program.

Supporting Documents

Course Reviewer Comments

lahne (10/28/14 9:13 am): Rollback: .
kleb6b (11/03/14 2:11 pm): Rollback: Please address footnote 13 Student must take English 3560 or English 1160.
kleb6b (02/06/15 3:23 pm): Delete Comp Eng 4097 from Footnote #3, per April 16, 2012 ECE Faculty Meeting approval
sraper (02/10/15 1:08 pm): Changed 5 hours of free electives to 3 hours (prior to the 4 year plan), and changed any 3xxx, 4xxx, 5xxx, and 28xx to 3000, 4000, 5000 and 2800.
kleb6b (04/07/15 10:16 am): CCC Meeting changes
kleb6b (04/10/15 9:02 am): Rollback: Rollback
stanleyj (04/10/15 9:11 am): The justification for the Communication Elective has been updated.
kleb6b (05/12/15 9:38 am): Change effective date
kleb6b (07/15/15 12:38 pm): Update Communication Elective to 3 credit hours

Key: 153
Preview Bridge

Program Change Request

Date Submitted: 02/26/15 11:44 am

Viewing: CV ENG-BS : Civil Engineering BS

File: 152.14

Last approved: 08/06/14 10:58 am

Last edit: 08/19/15 11:24 am

Changes proposed by: gchen

Catalog Pages Using this Program

Civil Engineering

Start Term	**Fall 2016** ~~8/1/2014~~
Program Code	CV ENG-BS
Department	Civil, Architectural, and Environmental Engineering
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. kristyg

Approval Path

1. 02/26/15 6:33 pm wschon: Approved for RCIVILEN Chair
2. 02/27/15 8:38 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 03/12/15 11:39 am sraper: Approved for Engineering DSCC Chair
4. 07/29/15 10:28 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:24 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:45 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Sep 27, 2013 by lahne
2. Aug 6, 2014 by lahne

Civil Engineering BS

Program Requirements and Description

Civil Engineering
Bachelor of Science

Entering freshmen desiring to study Civil Engineering will be admitted to the Freshman Engineering Program. They will, however, be permitted, if they wish, to state a Civil 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 Civil Engineering a minimum of **129** ~~128~~ 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. An average of at least two grade points per credit hour must also be attained in all courses taken in Civil 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 from the approved lists for art, English, foreign languages, music, philosophy, speech and media studies, or theater.
2. Depth requirement. Three credit hours must be taken in humanities or social sciences at the 2000-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 4000-level. 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 from the list of approved humanities/social sciences courses and may include one communications course in addition to ENGLISH 1120 .
4. Any specific departmental requirements in the general studies area must be satisfied.
5. Special topics and special problems and honors seminars are allowed only by petition to and approval by the student's department chair.

The Civil 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[2]	1	MECH ENG 1720	3
CHEM 1310 & CHEM 1319	5	MATH 1215	4
MATH 1214	4	PHYSICS 1135	4
ENGLISH 1120	3	General Ed Elective[1]	3
General Ed Elective[1]	3	General Ed Elective[1]	3
	16		17

Sophomore Year

First Semester	Credits	Second Semester	Credits
CIV ENG 2401[2]	3	MECH ENG 2350	2
CIV ENG 2003[2]	3	STAT 3113	3
CIV ENG 2200[2]	3	GEO ENG 1150	3
MATH 2222	4	CIV ENG 2210[2]	3
PHYSICS 2135	4	CIV ENG 2211[2]	1
		MATH 3304	3
	17		15

Junior Year

First Semester	Credits	Second Semester	Credits
ENG MGT 1210[2]	2	CIV ENG 3116[2]	3
CIV ENG 3201[2]	3	CIV ENG 3842[2]	3
CIV ENG 3715[2]	3	CIV ENG 3500[2]	3
CIV ENG 3330[2]	3	CIV ENG 3334[2]	4
CIV ENG 2601[2]	3	CIV ENG 3220[2]	3
General Ed Elective[1]	3		
	17		16

Senior Year

First Semester	Credits	Second Semester	Credits
CIV ENG 4010[2]	1	CIV ENG 4097[2]	3
(2) CIV ENG Depth Electives[3,4]	6	CIV ENG Tech Elective[3,5]	3
CIV ENG 4448[2]	3	CIV ENG Depth Elective[3,4]	3
CIV ENG 3210[2]	3	General Ed Elective[1]	3
General Ed Elective[1]	3	CIV ENG Tech Elective[3,5]	3
	16		15
Total Credits: 129			

1 All general education electives must be approved by the student's advisor. Students must comply with the general education

	requirements with respect to selection and depth of study. These requirements are specified in the current catalog. One general education elective must be from ENGLISH 1160, ENGLISH 3560, or SP&M S 1185.
2	A grade of 'C' or better required to satisfy graduation requirements.
3	A grade of 'C' or better may be required in CE technical and depth elective prerequisite courses. Refer to the Missouri S&T undergraduate catalog for this prerequisite information.
4	Choose depth electives using Guidelines for Depth and Technical Electives.
5	Choose technical electives using Guidelines for Depth and Technical Electives.

Note: All Civil Engineering students must take the Fundamentals of Engineering examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree; however, it is the first step toward becoming a registered professional engineer. This requirement is part of the Missouri S&T assessment process as described in Assessment Requirements found elsewhere in this catalog. Students must sign a release form giving the University access to their Fundamentals of Engineering Examination score.

Guidelines for Depth and Technical Electives

Please consult the Department's Advising Center or your academic advisor for guidelines regarding the selection of depth and technical electives. A maximum total of 6 credit hours of independent study (CIV ENG 5000 or CIV ENG 4099) can be used as depth or technical electives in the B.S. Civil Engineering curriculum.

Course Listings by Area

Construction Engineering

CIV ENG 5442	Construction Planning and Scheduling Strategies	3
CIV ENG 5445	Construction Methods	3
CIV ENG 5446	Management Of Construction Costs	3
~~CIV ENG 5460~~	~~Course CIV ENG 5460 Not Found~~	~~3~~
CIV ENG 5448	**Green Engineering: Analysis of Constructed Facilities**	**3**
CIV ENG 5449	Engineering and Construction Contract Specifications	3

Materials Engineering

CIV ENG 5112	Bituminous Materials	3
CIV ENG 5113	Composition And Properties Of Concrete	3
CIV ENG 5117	Asphalt Pavement Design	3
CIV ENG 5156	**Concrete Pavement Design**	**3**

Environmental Engineering

CIV ENG 3615	Water And Wastewater Engineering	3
CIV ENG 5605	Environmental Systems Modeling	3
CIV ENG 5619	Environmental Engineering Design	3
CIV ENG 5630	Remediation of Contaminated Groundwater and Soil	3

CIV ENG 5640	Environmental Law And Regulations	3
CIV ENG 5642	Sustainability, Population, Energy, Water, and Materials	3
CIV ENG 5650	Public Health Engineering	3
CIV ENG 5660	Introduction To Air Pollution	3
CIV ENG 5662	Air Pollution Control Methods	3
CIV ENG 5665	Indoor Air Pollution	3
CIV ENG 5670	Solid Waste Management	3

Geotechnical Engineering

CIV ENG 4729	Foundation Engineering	3
CIV ENG 5715	Intermediate Soil Mechanics	3
CIV ENG 5716	Geotechnical Earthquake Engineering	3
CIV ENG 5729	Foundation Engineering II	3
CIV ENG 5744	Geosynthetics in Engineering	3
CIV ENG 5750	Transportation Applications of Geophysics	3

Water Resources Engineering

CIV ENG 5330	Unsteady Flow Hydraulics	3
CIV ENG 5331	Hydraulics Of Open Channels	3
CIV ENG 5333	**Intermediate Hydraulic Engineering**	**3**
CIV ENG 5335	Water Infrastructure Engineering	3
CIV ENG 5337	River Mechanics And Sediment Transport	3
CIV ENG 5338	Hydrologic Engineering	3

Structural Engineering

CIV ENG 5001	**Special Topics (Structural Masonry Design)**	**0-6**
CIV ENG 5118	Smart Materials And Sensors	3
CIV ENG 5203	Applied Mechanics In Structural Engineering	3
CIV ENG 5208	**Structural Dynamics**	**3**
CIV ENG 5260	Analysis And Design Of Wood Structures	3
CIV ENG 5205	**Structural Analysis II**	**3**
CIV ENG 5206	Low-Rise Building Analysis and Design	3
CIV ENG 5207	Computer Methods of Structural Analysis	3
CIV ENG 5210	Advanced Steel Structures Design	3
CIV ENG 5220	Advanced Concrete Structures Design	3
CIV ENG 5222	Prestressed Concrete Design	3
CIV ENG 5231	Infrastructure Strengthening with Composites	3

Transportation Engineering

CIV ENG 5250	Air Transportation	3
CIV ENG 5510	Geometric Design Of Highways	3
CIV ENG 5513	Traffic Engineering	3

Justification for request

CIV ENG 2003 course content expanded to include instruction & labs in new computer tools used in academia & industry, increasing credit hours from 2 to 3. The minimum credit hours for CV ENG-BS Program thus increased by 1.

Supporting Documents

Course Reviewer Comments

kleb6b (11/05/14 10:44 am): Reorder classes, per Dr. Chen

sraper (12/08/14 12:49 pm): Rollback: You have several places with "undefined" and I do not know what you mean by that.

kleb6b (12/08/14 12:58 pm): Rollback: You have several places with "undefined" and I do not know what you mean by that.

kleb6b (08/19/15 11:24 am): Update effective term

Key: 152

Preview Bridge

Program Change Request

Date Submitted: 04/21/15 11:13 am

Viewing: PE ENG-BS : Petroleum Engineering BS

File: 108.1

Last edit: 09/08/15 9:26 am

Changes proposed by: reflori

Catalog Pages Using this Program

Petroleum Engineering

Start Term	**Fall 2016**
Program Code	PE ENG-BS
Department	Geosciences and Geological and Petroleum Engineering
Title	

In Workflow

1. RGEOSENG Chair
2. CCC Secretary
3. Sciences DSCC Chair
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. kristyg

Approval Path

1. 04/21/15 9:31 pm ikuenobe: Approved for RGEOSENG Chair
2. 04/22/15 8:04 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 05/06/15 4:04 pm imorgan: Approved for Sciences DSCC Chair
4. 06/29/15 9:49 am sraper: Approved for Engineering DSCC Chair
5. 07/15/15 1:50 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
6. 09/08/15 9:27 am Kaylon Buckner (kleb6b): Approved for CCC Meeting

Agenda

Petroleum Engineering BS

Program Requirements and Description

Bachelor of Science
Petroleum Engineering

Entering freshmen desiring to study Petroleum Engineering will be admitted to the Freshman Engineering Program. They will, however, be permitted, if they wish, to state a Petroleum 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. A grade point average of 2.80 or higher is required to enter the Petroleum Engineering program from the Freshman Engineering Program.** ~~major.~~

For the Bachelor of Science degree in Petroleum Engineering a minimum of 129 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. A student must maintain at least two grade points per credit hour for all courses taken in ~~the student's major department, and an average of at least two grade points per credit hour must be maintained in~~ Petroleum Engineering.

~~The Petroleum Engineering curriculum contains a required number of hours in humanities and social sciences as specified by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.~~Each student's program of study must contain a minimum of **21** ~~16~~ credit hours of course work **in general education** ~~from the humanities~~ and **must** ~~the social sciences areas and should~~ be chosen according to the following rules:

1. **Six credit hours of English:** All students are required to take **ENGLISH 1120** ~~one American history course~~ and **either ENGLISH 3560 (preferred) or ENGLISH 1160 or ENGLISH 1600.** ~~one economics course.~~
2. **Nine credit hours of basic** ~~Some disciplines require one~~ **humanities and social sciences: All students are required** ~~course~~ **to take one history course, one economics course and one humanities course. The history course is to be selected from HISTORY 1200, HISTORY 1300, HISTORY 1310,** ~~from the approved lists for art, English, foreign languages, music, philosophy, speech and media studies,~~ **or POL SCI 1200. theater.** ~~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** ~~ECON 1100~~ or **ECON 1200** ~~ECON 1200~~ . **The** ~~Petroleum Engineering curriculum contains a required number of hours in~~ **humanities course must be selected from "The Approved List of Humanities and Social Science Courses** ~~social sciences as specified by the Engineering Accreditation Commission of the Accreditation Board~~ **for Engineering Degrees" maintained by the Office of Undergraduate Studies.** ~~**and Technology.**~~
3. **Three credit hours as a depth requirement.** ~~Some disciplines require one humanities course to be selected from the approved lists for art, English, foreign languages, music, philosophy, speech and media studies, or theater.~~**Three** ~~Of the remaining hours, six~~ credit hours must be taken in humanities or social sciences at the **2000-level** ~~100 level~~ or above and must be selected from the approved **list.** ~~lists.~~ **This course** ~~Each of these courses~~ must have as a prerequisite one of the humanities or social sciences courses already taken. Foreign language courses numbered **1180 will** ~~70 to 80 can~~ be considered to **satisfy this requirement.** ~~be one of these courses.~~ **Students** ~~(Students~~ may receive humanities credit for foreign language courses in their native tongue only if the course is at the **4000-level.** ~~300 level.)~~ **All courses taken to satisfy the depth requirement must be taken after graduating from high school.**
4. **Three credit hours of elective humanities and social sciences from the approved list.**
5. ~~Some departments list specific requirements; e.g., a psychology course, a literature course, and/or a second semester of economics.Selections should be made to ensure that these requirements are met.Skill courses are not allowed to meet~~

humanities and social sciences requirements except in foreign languages.Students who select the foreign language option are urged to take more than one course.Special **topics** topics, special problems courses and **special problems and** honors seminars are allowed only by petition to **and** and approval by the student's department **chair.** chairman.

The Petroleum Engineering program at Missouri S&T **consists** is characterized by its focus on the scientific basics of **a strong foundation in math, sciences and** engineering **fundamentals, plus strong content in the traditional Petroleum Engineering core areas** and its innovative application; indeed, the underlying theme of **drilling, production** this educational program is the application of the scientific basics to engineering practice through attention to problems and **reservoir engineering. Two unique features of the curriculum are a strong sequence** needs of **courses in Geology and Geophysics, plus a two course sequence in finite element analysis and mechanical earth modeling. S&T Petroleum Engineering students are prepared to solve today's problems and tomorrow's. Students learn theory, have ample hands-on experiences in laboratories, and they learn many modern software packages used by the petroleum industry.** 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.Students planning on majoring in petroleum engineering should take the following courses.

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
ENGLISH 1120	3	PET ENG 1110	1
FR ENG 1100	1	MATH 1215	4
CHEM 1310	4	GEO ENG 1150 or GEOLOGY 1110	3
CHEM 1319	1	**GEO ENG 1119**	**1**
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3	PHYSICS 1135	4
MATH 1214	4	**PET ENG 2510**	**3**
		MECH ENG 1720	3
	16		18
Sophomore Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MATH 2222	4	MATH 3304	3
PHYSICS 2135	4	PET ENG 3520	3
GEOLOGY 3310 (Geol 3319 lab optional)	3	PET ENG 3529	1
PET ENG 2510	3	MECH ENG 2350	2
CIV ENG 2200	3	CIV ENG 2210	3
PET ENG 3320	**3**	**ECON 1100 or 1200**	**3**
		GEOLOGY 3620	3
	17		17
Junior Year			
First Semester	**Credits**	**Second Semester**	**Credits**
GEOLOGY 4511	3	PET ENG 3310	3

GEOPHYS 4231	3	~~PET ENG 3410~~	~~3~~
~~PET ENG 3210~~	~~3~~	**PET ENG 3330**	**3**
CIV ENG 3330	3	**PET ENG 4410**	**3**
~~ECON 1100 or 1200~~	~~3~~	PET ENG 4710	3
PET ENG Reservoir Engineering Elective[4]	3	PET ENG 4590	3
GEOLOGY 5513	**3**	Humanities/Social Sci Elective[2]	3
PET ENG 4210	**3**		
	15		15

Senior Year

First Semester	Credits	Second Semester	Credits
MECH ENG 2527	3	PET ENG 4097	3
PET ENG 4010[3]	1	~~ENGLISH 1600[6]~~	~~3~~
PET ENG 4520	3	GEO ENG 4115	3
PET ENG 4720	3	Hum/Soc Sci Elective[2]	3
PET ENG Elective[5]	3	PET ENG Elective[5]	3
Humanities/Social Sci Elective[2]	3	**ENGLISH 3560[6]**	**3**
	16		15
Total Credits: 129			

1 All freshmen Petroleum Engineering students must enroll in CHEM 1100.

2 Humanities/Social Science electives are to be selected from a list of approved courses as published by the department. Petroleum Engineering students are especially encouraged to study foreign languages

3 All Petroleum Engineering students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade on this examination is not required to earn a B.S. degree, however, it is the first step to becoming a registered professional engineer. This requirement is part of Missouri S&T assessment process as described in Assessment Requirements found elsewhere in this catalog. Students must sign a release form giving the University access to their Fundamentals of Engineering Examination score.

4 This is a reservoir engineering elective. Students should choose from PET ENG 4511, PET ENG 4531, PET ENG 4611, PET ENG 4311, or PET ENG 4621.

5 Select Petroleum Engineering electives in accordance with interest area. Students interested in reservoir engineering select from topics in advanced reservoir engineering, simulation, natural gas engineering, and formation characterization. Students interested in drilling/completions and production select petroleum electives such as advanced drilling, well completions, stimulation. Other general interest petroleum electives may be selected as available.

6 Students may also select ENGLISH 1160 or ENGLISH 1600.

The total number of credit hours required for a degree in Petroleum Engineering is 129.

Petroleum Engineering students must earn the grade of “C” or better in all Petroleum Engineering courses to receive credit toward graduation.

Justification for request

Various course changes needed. Also, we introduced a new course, Petrophysics, in the Sophomore Fall semester to give students the knowledge base they need for reservoir engineering.

Supporting Documents

Course Reviewer Comments

kleb6b (03/17/15 9:35 am): Change Pet Eng 3330 in Junior Year, First Semester to Pet Eng 4210, per Dr. Flori

kleb6b (04/07/15 8:06 am): Rollback: Requested Rollback per Dr. Flori

kleb6b (04/22/15 8:04 am): Changed Effective Term to Fall 2016

imorgan (05/06/15 4:04 pm): My understanding is that this department does not need input from Sciences-DSCC for 2015-16.

kleb6b (05/08/15 10:40 am): Change per Dr. Raper

kleb6b (05/08/15 10:43 am): Edit

sraper (05/11/15 9:43 am): Changes made per Dr. Flori (email) 1. In the curriculum we should have English 3560 Technical Writing (instead of English 1160). In the prefatory remarks, we need: 1. Six credit hours of English: All students are required to take English 1120 and either English 3560 (preferred) or English 1160 or English 1600. In the Footnote (footnote 6), we need: Students may also select English 1160 or English 1600. *email Monday, May 11, 2015 8:43 a.m.

kleb6b (08/19/15 11:25 am): Update per CCC meeting

kleb6b (09/08/15 9:17 am): Changes per CCC Meeting

kleb6b (09/08/15 9:19 am): Update per CCC meeting

kleb6b (09/08/15 9:21 am): Update per CCC meeting

kleb6b (09/08/15 9:26 am): Update per CCC meeting

Key: 108

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 06/09/15 2:29 pm

Viewing: **ARCH ENG 3803 : Building Electrical Systems**

File: 4219

Last edit: 08/19/15 11:03 am

Changes proposed by: baur

Programs referencing this course

ARC ENG-BS: Architectural Engineering BS

Requested Effective Change Date	Spring 2016
Department	Civil, Architectural, and Environmental Engineering
Discipline	Architectural Engineering (ARCH ENG)
Course Number	3803
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. lshelton
11. Peoplesoft

Approval Path

1. 06/09/15 4:35 pm wschon: Approved for RCIVILEN Chair
2. 06/10/15 12:00 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:46 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:35 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:03 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:20 am imorgan: Approved for Campus Curricula Committee Chair

Building Electrical Systems

Abbreviated Course Title: Bldg Elect Syst

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 and Physics 2135.

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 new course:

This course will provide the architectural engineering program greater depth in building electrical systems. It is intended to replace EE 2801 as a pre-requisite to ArchE 3805 (a CC form for ArchE 3805 is being submitted simultaneously as is a DC form for the BSArchE program). ArchE 3805 will be re-structured to focus more on lighting systems and illumination (the CC form for ArchE 3805 will also address this change).

Semesters previously offered as an experimental course

This will be the new pre-requisite for ArchE 3805, which typically has an enrollment of 40 students. As the pre-requisite for ArchE 3805, student enrollment numbers are expected to be similar.

Co-Listed Courses:

Course Reviewer Comments

kleb6b (06/09/15 2:27 pm): Rollback: Rollback per Dr. Baur

Key: 4219

Preview Bridge

Course Inventory Change Request

Date Submitted: 06/09/15 2:40 pm

Viewing: **ARCH ENG 3805 : Building ~~Electrical and~~ Lighting Systems**

File: 2069.1

Last edit: 06/09/15 4:38 pm

Changes proposed by: baur

Programs referencing this course

ARC ENG-BS: Architectural Engineering BS

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Civil, Architectural, and Environmental Engineering
Discipline	Architectural Engineering (ARCH ENG)
Course Number	3805
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. Ishelton
11. Peoplesoft

Approval Path

1. 06/09/15 4:39 pm wschon: Approved for RCIVILEN Chair
2. 06/10/15 12:00 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:47 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:36 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:44 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:20 am imorgan: Approved for Campus Curricula Committee Chair

Building ~~Electrical and~~ Lighting Systems

Abbreviated Course Title	**Bldg Light Syst** ~~Bldg Elect & Lighting Systems~~

Catalog Description

Design and specifications for interior and exterior building ~~electrical and~~ illumination **systems.** ~~systems, including electrical and lighting loads, branch circuits, grounding and switching.~~ Work includes study of applicable NFPA 70 (NEC) and related building codes.

Prerequisites

~~Elec Eng 2800 and~~ Arch Eng **3803 and Arch Eng** 3804.

Field Trip Statement

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

Justification for change:

The justification for changing the course is to provide the architectural engineering program greater depth in building lighting systems with the possibility developing additional materials in the building systems area (a CC form for ArchE 3803 is being submitted simultaneously since it is a new prerequisite requirement as is a DC form for the BSArchE program).

Semesters previously offered as an experimental course

ArchE 3805 typically has an enrollment of 40 students. Student enrollment numbers are expected to be similar.

Co-Listed Courses:

Course Reviewer Comments

kleb6b (06/03/15 3:24 pm): Rollback: Edit prerequisite

kleb6b (06/09/15 2:27 pm): Rollback: Rollback per Dr. Baur

Key: 2069

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 04/01/15 3:30 pm

Viewing: **ART 1190 : Achieving a Life of Art**

File: 2267.1

Last edit: 08/19/15 11:03 am

Changes proposed by: denises

Requested Effective Change Date	Fall **2015** ~~2014~~
Department	Arts, Languages, & Philosophy
Discipline	Art (ART)
Course Number	1190
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/08/15 2:53 pm lance: Approved for RPHILOSO Chair
2. 06/08/15 2:55 pm Kaylon Buckner (kleb6b):

Approved for CCC Secretary

3. 06/08/15 3:20 pm ivliyeva: Approved for Arts & Humanities DSCC Chair
4. 07/15/15 1:37 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:04 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:20 am imorgan: Approved for Campus Curricula Committee Chair

Achieving a Life of Art

Abbreviated Course Title: Achieving a Life of Art

Catalog Description:

An introduction to the profession and practice of art in its various forms. This is a Residential College Course.

Prerequisites

Field Trip Statement				
Credit Hours Total: 0.5	LEC: .5	LAB: 0	IND: 0	RSD: 0
Required for Majors	No			
Elective for Majors	No			

Justification for change:
Update per Luce Myers

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 2267
Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 06/29/15 12:50 pm

Viewing: **CER ENG 3110 : Introduction to Biomedical Engineering**

File: 4231

Last edit: 08/19/15 11:08 am

Changes proposed by: smiller

Requested Effective Change Date	Spring 2016
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	3110
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/29/15 12:59 pm huebner: Approved for RMATSENG Chair
2. 07/06/15 8:11 am Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 07/27/15 10:16 am
sraper: Approved for Engineering DSCC Chair
4. 07/29/15 10:29 am
Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:09 am
Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:21 am
imorgan: Approved for Campus Curricula Committee Chair

Introduction to Biomedical Engineering

Abbreviated Course Title: Intro to BioMed Engr

Catalog Description

This course will provide an introduction to the interdisciplinary field of biomedical engineering. The molecular, cellular, physiological and engineering principles that govern the field will be covered. Applications will include biomaterials, tissue

engineering, biomechanics, bioimaging, bioinstrumentation, bio-nanotechnology and artificial organs.

Prerequisites

Junior standing or above.

Field Trip Statement

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

Total: 3

Required for Majors	No
Elective for Majors	Yes

Justification for new course:

Required core course to support Biomedical Engineering Minor degree program

Semesters previously offered as an experimental course

Not applicable

Co-Listed Courses:

Course Reviewer Comments

sraper (07/27/15 10:16 am): Added Junior standing or above for prereq per Scott Miller's email.

Key: 4231

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/26/15 1:28 pm

Viewing: **CHEM 1310 : General Chemistry I**

File: 1759.1

Last edit: 07/31/15 10:20 am

Changes proposed by: woelkk

Catalog Pages referencing this course

- Freshman Engineering Program

Programs referencing this course

- AE ENG-BS: Aerospace Engineering BS
- AP MATH-BS: Applied Mathematics BS
- ARC ENG-BS: Architectural Engineering BS
- BIO SC-BA: Biological Sciences BA
- BIO SC-BS: Biological Sciences BS
- CH ENG-BS: Chemical Engineering BS
- CHEM-BA: Chemistry BA
- CHEM-BS: Chemistry BS
- CHEM-MI: Chemistry Minor
- CMP SC-BS: Computer Science BS
- CP ENG-BS: Computer Engineering BS
- CR ENG-BS: Ceramic Engineering BS
- CV ENG-BS: Civil Engineering BS
- EL ENG-BS: Electrical Engineering BS
- ENG MG-BS: Engineering Management BS
- EV ENG-BS: Environmental Engineering BS

In Workflow

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

Approval Path

1. 05/26/15 1:41 pm woelk (woelkk): Approved for RCHEMIST Chair
2. 05/26/15 1:47 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary

GE ENG-BS: Geological Engineering BS
GL&GPH-BS: Geology and Geophysics BS
MC ENG-BS: Mechanical Engineering BS
MI ENG-BS: Mining Engineering BS
MT ENG-BS: Metallurgical Engineering BS
NU ENG-BS: Nuclear Engineering BS
PE ENG-BS: Petroleum Engineering BS
PHYSIC-BS: Physics BS
PRE-MED-MI: Pre-Medicine Minor

Other Courses referencing this course

In The Prerequisites:

ARCH ENG 2103 : Architectural Materials And Methods Of Construction
BIO SCI 4493 : General Virology
CHEM 1111 : Invitational Seminar
CHEM 1320 : General Chemistry II
CHEM 2210 : Organic Chemistry I
EXP ENG 5514 : Display Fireworks Manufacturing
GEOLOGY 2610 : Mineralogy And Crystallography
GEOLOGY 2611 : Physical Mineralogy And Petrology
GEOLOGY 3410 : Introduction To Geochemistry
MET ENG 5640 : Microfabrication Materials And Processes
PET ENG 2510 : Properties Of Hydrocarbon Fluids
PET ENG 4821 : Environmental Petroleum Applications

3. 07/31/15 10:21 am imorgan: Approved for Sciences DSCC Chair
4. 07/31/15 10:27 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:21 am imorgan: Approved for Campus Curricula Committee Chair

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Chemistry
Discipline	Chemistry (CHEM)
Course Number	1310

Title	General Chemistry I
Abbreviated Course Title	General Chemistry I

Catalog Description

A comprehensive study of ~~the~~ general ~~principles of~~ chemistry **concepts** with **focus** ~~emphasis~~ on the **atomic** ~~fundamental laws~~ and **molecular nature of matter.** ~~their application in practical computations.~~ **Fundamental scientific principles will be applied to solve chemistry problems and describe macroscopic physical properties.**

Prerequisites

Entrance requirements.

Field Trip Statement

Credit Hours Total: 4	LEC: 2	LAB: 0	IND: 0	RSD: 2

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

Justification for change:

updated course description

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1759

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/26/15 1:30 pm

Viewing: **CHEM 1320 : General Chemistry II**

File: 1885.1

Last edit: 07/31/15 10:35 am

Changes proposed by: woelkk

Catalog Pages referencing this course

Freshman Engineering Program

Programs referencing this course

BIO SC-BA: Biological Sciences BA
BIO SC-BS: Biological Sciences BS
CH ENG-BS: Chemical Engineering BS
CHEM-BA: Chemistry BA
CHEM-BS: Chemistry BS
CHEM-MI: Chemistry Minor
CR ENG-BS: Ceramic Engineering BS
EV ENG-BS: Environmental Engineering BS
MT ENG-BS: Metallurgical Engineering BS
PHYSIC-BS: Physics BS
PRE-MED-MI: Pre-Medicine Minor

Other Courses referencing this course

In The Prerequisites:

In Workflow

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

Approval Path

1. 05/26/15 1:42 pm woelk (woelkk): Approved for RCHEMIST Chair
2. 05/26/15 1:47 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary

BIO SCI 3313 : Microbiology
CHEM 2510 : Analytical Chemistry I
CHEM ENG 2100 : Chemical Engineering Material & Energy Balances
ENV ENG 3603 : Chemical Fundamentals Of Environmental Engineering

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Chemistry
Discipline	Chemistry (CHEM)
Course Number	1320
Title	

3. 07/31/15 10:35 am imorgan: Approved for Sciences DSCC Chair
4. 07/31/15 10:40 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:21 am imorgan: Approved for Campus Curricula Committee Chair

General Chemistry **II**

Abbreviated Course Title	General Chemistry **II**

Catalog Description

In-depth analysis of chemical reactions with an introduction to thermodynamics and kinetics including applications to electrochemistry and nuclear chemistry.
~~Continuation of course Chem 1310 with some emphasis on descriptive chemistry.~~

~~The ionic theory and mass laws are introduced and applied at advantageous points in the lecture.~~

Prerequisites

Chem 1310 **with a grade of "C" or better** and **Chem** 1319.

Field Trip Statement

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

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

Elective for Majors No

Justification for change:

updated course description

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

imorgan (07/31/15 10:35 am): Bio Sci has concerns about the change of prerequisite.

Key: 1885

Preview Bridge

Course Inventory Change Request

Date Submitted: 07/10/15 3:53 pm

Viewing: **CHEM 2220 : Organic Chemistry II**

File: 1098.1

Last edit: 07/15/15 8:07 am

Changes proposed by: tschuman

Programs referencing this course

- BIO SC-BA: Biological Sciences BA
- BIO SC-BS: Biological Sciences BS
- CH ENG-BS: Chemical Engineering BS
- CHEM-BA: Chemistry BA
- CHEM-BS: Chemistry BS
- PRE-MED-MI: Pre-Medicine Minor

Other Courses referencing this course

In The Prerequisites:

- BIO SCI 4393 : Immunology
- CHEM 3510 : Analytical Chemistry II
- CHEM 4210 : Intermediate Organic Chemistry I
- CHEM 4220 : Intermediate Organic Chemistry II
- CHEM 4297 : Organic Synthesis And Spectroscopic Analysis
- CHEM 4610 : General Biochemistry
- CHEM 4810 : Chemistry And Inherent Properties Of Polymers
- CHEM 4850 : Fundamentals Of Protective Coating I
- CHEM 5210 : Fundamentals of Organic Reactions
- CHEM 5220 : Synthetic Organic Chemistry

In Workflow

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

Approval Path

1. 07/14/15 5:47 pm woelk (woelkk): Approved for RCHEMIST Chair
2. 07/15/15 8:07 am Kaylon Buckner (kleb6b): Approved for CCC Secretary

CHEM 5510 : Introduction to Chemical Analysis
CHEM 5610 : Biochemistry
CHEM 5810 : Introduction to Polymeric Materials
CHEM 5850 : Introduction to Coating Chemistry
CHEM 6250 : Spectrometric Identification of Organic Compounds
CHEM 6650 : Free Radicals In Biochemistry
CHEM 6840 : Polymer Physical Chemistry And Analysis

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Chemistry
Discipline	Chemistry (CHEM)
Course Number	2220
Title	

3. 07/31/15 10:36 am imorgan: Approved for Sciences DSCC Chair
4. 07/31/15 10:41 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:22 am imorgan: Approved for Campus Curricula Committee Chair

Organic Chemistry II

Abbreviated Course Title	Organic Chemistry II

Catalog Description

This course consists of three parts. The first part will cover aromaticity and reactions of aromatic compounds, the second part will cover carbonyl compounds, amines and their reactions, and the third part will cover bioorganic compounds that include

carbohydrates, aminoacids, peptides, proteins, lipids, nucleosides, nucleotides, and nucleic acids.

Prerequisites

Grade of "C" or better in Chem 2210. ~~Chem 2210.~~

Field Trip Statement

Credit Hours Total: 4	LEC: 4	LAB: 0	IND: 0	RSD: 0
Required for Majors	No			
Elective for Majors	No			

Justification for change:

Organic Division within Chemistry Dept. desires students entering this course (2220) to have achieved a level of competency (in the 2210 prerequisite) to help ensure success in this course. Students who do not do well in 2210 historically fail the 2220 course.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1098

Preview Bridge

Course Inventory Change Request

Date Submitted: 02/26/15 11:22 am

Viewing: **CIV ENG 2003 : Engineering Communications and Computations**

File: 195.1

Last edit: 08/19/15 11:09 am

Changes proposed by: gchen

Programs referencing this course

CV ENG-BS: Civil Engineering BS

EV ENG-BS: Environmental Engineering BS

Other Courses referencing this course

In The Catalog Description:

ARCH ENG 2003 : Engineering Communications

In The Prerequisites:

CIV ENG 3500 : Transportation Engineering

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Civil, Architectural, and Environmental Engineering
Discipline	Civil Engineering (CIV ENG)
Course Number	2003
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. lshelton
11. Peoplesoft

Approval Path

1. 02/26/15 6:32 pm wschon: Approved for RCIVILEN Chair
2. 02/27/15 8:38 am Kaylon Buckner (kleb6b): Approved for CCC Secretary

3. 03/12/15 11:38 am sraper: Approved for Engineering DSCC Chair
4. 07/29/15 10:30 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:10 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:22 am imorgan: Approved for Campus Curricula Committee Chair

Engineering Communications **and Computations**

Abbreviated	**Eng Comm & Comp** ~~Engr~~
Course Title	~~Communications~~

Catalog Description

Programming ~~Introduction to programming concepts~~ and software tools **(including computer aided design and** ~~(computer aided design~~ drafting, **computer-based** ~~computer~~ mathematics, word processing, **spreadsheet, and** ~~spreadsheets, and~~ presentation software) with application to ~~written and oral communication in~~

~~professional civil~~ and **emphasis on written, graphical, and oral communication in professional civil and** architectural engineering practice.

Prerequisites

~~Sophomore standing.~~

Field Trip Statement

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

Justification for change:

Course content expanded to include instruction & labs in new computer tools used in academia & industry.

Semesters previously offered as an experimental course

Co-Listed Courses:

ARCH ENG 2003 - Engineering Communications

Course Reviewer Comments

Key: 195

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 03/11/15 5:01 pm

Viewing: **COMP ENG 1200 : Introduction to Digital Electronics**

File: 4205

Last edit: 05/12/15 9:54 am

Changes proposed by: stanleyj

Requested Effective Change Date	Fall 2015
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	1200
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 05/12/15 9:35 am Daryl Beetner (daryl): Approved for RELECENG Chair
2. 05/12/15 9:42 am Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/23/15 10:30 am
sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:37 pm
Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am
Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:23 am
imorgan: Approved for Campus Curricula Committee Chair

Introduction to Digital Electronics

Abbreviated Course Title	Intro to Digital Elect

Catalog Description

Introduction to electronics and digital circuit design including combinational logic and sequential circuits using circuit design tools, logic gates, integrated circuits and field programmable gate arrays. This course provides S&T equivalent credit for the Project Lead The Way Digital Electronics course.

Prerequisites

None

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 is to be offered only as transfer credit for students completing the Digital Electronics through the Project Lead The Way (PLTW) program. Several S&T courses are currently available that provide college credit for PLTW courses taken in high school, including Biological Sciences 1983, Biological Sciences 1993, Biological Sciences 1946, Biological Sciences 1943, and Mechanical Engineering 1720.

This course will not be taught in the classroom at S&T, but, rather, will serve as a placeholder to provide college credit. This course is not included in the required curriculum for the Computer Engineering BS degree program, but provides an introduction to computer engineering that will better prepare students for the computer engineering curriculum.

Missouri S&T has hosted training for high school teachers for PLTW Pathway to Engineering courses since 2006, which includes the Digital Electronics course. The number of classroom hours required for high school students to complete the PLTW Digital Electronics course is at least two times the number of hours required for a comparable Introduction to Computer Engineering (Comp Eng 2210) course offered at S&T; hence, the 3 credit hour assignment. All students taking Digital Electronics course must take a nationally administered exam through PLTW.

The justification for skipping the EC stage is that the content of the PLTW Digital Electronics course is fundamental knowledge for computer engineers and is covered in core computer engineering courses in greater depth. Hence, there is nothing experimental about the content of this course. Designating this course as experimental would detract and make the course less valuable to students as transcriptable S&T credit. Skipping the EC stage will allow for the course to be more easily recognized as containing introductory college material and would avoid the confusion of progressing from an EC to regular course designation.

*Needs to be catalog suppressed.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kleb6b (05/12/15 9:54 am): *Needs to be catalog suppressed.

Key: 4205

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/22/15 11:39 am

Viewing: **COMP ENG 5450 : Digital Image Processing**

File: 2375.2

Last approved: 04/28/14 3:47 pm

Last edit: 05/22/15 11:39 am

Changes proposed by: martins

Programs referencing this course

CP ENG-BS: Computer Engineering BS

Other Courses referencing this course

In The Catalog Description:

ELEC ENG 5450 : Digital Image Processing

Requested Effective Change Date	**Summer 2016** ~~Spring 2015~~
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	5450
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/12/15 2:30 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 06/12/15 2:32 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:46 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:38 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:23 am imorgan: Approved for Campus Curricula Committee Chair

History

1. Apr 28, 2014 by lahne (2375.1)

Digital Image Processing

Abbreviated Course Title: Digital Image Processing

Catalog Description

Fundamentals of human perception, sampling and quantization, image transforms,

enhancement, restoration, channel and source coding.

Prerequisites

At least one of the following: Elec Eng **3400, Elec Eng 3410, Elec Eng 3420, or prior exposure to Fourier Transforms and consent of the instructor.** ~~3410~~

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:

To update prerequisites

Semesters previously offered as an experimental course

Co-Listed Courses:

ELEC ENG 5450 - Digital Image Processing

Course Reviewer Comments

Key: 2375

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/22/15 11:44 am

Viewing: **COMP ENG 5460 : Machine Vision**

File: 180.3

Last approved: 04/28/14 4:00 am

Last edit: 05/22/15 11:44 am

Changes proposed by: martins

Programs referencing this course

CP ENG-BS: Computer Engineering BS

Other Courses referencing this course

In The Catalog Description:

ELEC ENG 5460 : Machine Vision

Requested Effective Change Date	Spring **2016** ~~2015~~
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	5460
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/12/15 2:31 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 06/12/15 2:32 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:46 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:39 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:23 am imorgan: Approved for Campus Curricula Committee Chair

History

1. Apr 28, 2014 by lahne (180.1)

Machine Vision

Abbreviated Course Title: Machine Vision

Catalog Description

Image information, image filtering, template matching, histogram transformations,

edge detection, boundary detection, region growing and pattern recognition. Complementary laboratory exercises are required.

Prerequisites

At least one of the following: Elec Eng 3400, Elec ~~Comp~~ Eng 3410, Elec Eng 3420, ~~2210 and preceded~~ or prior exposure to Fourier Transforms and consent of the instructor. ~~accompanied by Elec Eng 3410.~~

Field Trip Statement

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

Justification for change:

To update the prerequisites.

Semesters previously offered as an experimental course

Co-Listed Courses:

ELEC ENG 5460 - Machine Vision

Course Reviewer Comments

Key: 180

Preview Bridge

Course Inventory Change Request

Date Submitted: 06/12/15 1:36 pm

Viewing: **COMP ENG 6330 : Clustering Algorithms**

File: 2280.1

Last edit: 06/12/15 1:36 pm

Changes proposed by: martins

Catalog Pages referencing this course

Information Science and Technology

Other Courses referencing this course

In The Catalog Description:

COMP SCI 6405 : Clustering Algorithms

ELEC ENG 6340 : Clustering Algorithms

STAT 6239 : Clustering Algorithms

SYS ENG 6214 : Clustering Algorithms

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	6330
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/12/15 2:33 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 06/12/15 2:36 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:46 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:40 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:23 am imorgan: Approved for Campus Curricula Committee Chair

Clustering Algorithms

Abbreviated Course Title: Clustering Algorithms

Catalog Description

An introduction to cluster analysis and clustering algorithms rooted in computational intelligence, computer science and statistics. Clustering in sequential data, massive data and high dimensional data. Students will be evaluated by individual or group research projects and research presentations.

Prerequisites

At least one graduate course in statistics, data mining, algorithms, computational intelligence, or neural networks, consistent with student's degree program.

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 change:

To update co-listed courses using new 4 digit numbers

Semesters previously offered as an experimental course

Co-Listed Courses:

ELEC ENG 6340 - Clustering Algorithms
SYS ENG 6214 - Clustering Algorithms
COMP SCI 6405 - Clustering Algorithms
~~AND STAT 6239 - Course Not Found~~
STAT 6239~~--~~ Clustering Algorithms

Course Reviewer Comments

kleb6b (06/12/15 1:35 pm): Rollback: Correct, per Sandy

Key: 2280

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/22/15 11:14 am

Viewing: **ELEC ENG 5160 : Computer-Aided Network Design**

File: 705.1

Last edit: 06/12/15 2:36 pm

Changes proposed by: martins

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	5160
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/12/15 2:34 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 06/12/15 2:36 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:46 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:41 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:24 am imorgan: Approved for Campus Curricula Committee Chair

Computer-Aided Network Design

Abbreviated Course Title: Comput-Aided Netwrk Des

Catalog Description

Analysis and design of active and passive electric networks. Theory and computer application, including methods for automatic formulation of network state equations, network tolerance, network optimization, and device modeling.

Prerequisites

Elec Eng **3100.** ~~3100, 267.~~

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

Justification for change:

To delete EE 267 (Course no longer taught)

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 705

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/22/15 11:18 am

Viewing: **ELEC ENG 5170 : Introduction To Circuit Synthesis**

File: 904.1

Last edit: 06/12/15 3:32 pm

Changes proposed by: martins

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	5170
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/12/15 3:27 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 06/12/15 3:32 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:46 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:42 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:24 am imorgan: Approved for Campus Curricula Committee Chair

Introduction To Circuit Synthesis

Abbreviated Course Title: Intro/Circuit Synthesis

Catalog Description

Fundamentals of linear circuit theory. Matrix formulation, and topological methods as applied to circuit analysis. Properties of network functions and introductory network synthesis.

Prerequisites

Elec Eng **3400.** ~~267.~~

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

Justification for change:

To delete EE 267 (Course no longer taught)

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 904

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/22/15 11:24 am

Viewing: **ELEC ENG 5320 : Neural Networks ~~For~~ Control and Applications**

File: 2076.1

Last edit: 06/12/15 3:00 pm

Changes proposed by: martins

Catalog Pages referencing this course

Systems Engineering

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	5320
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/12/15 2:41 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 06/12/15 3:00 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:46 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:42 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:24 am imorgan: Approved for Campus Curricula Committee Chair

Neural Networks ~~For~~ Control **and Applications**

Abbreviated Course Title: Neural Netwrks ~~For~~ Cntrl **App**

Catalog Description

Introduction to artificial neural networks and various supervised and unsupervised learning techniques. Detailed analysis of some of the neural networks that are used in control and identification of dynamical systems. Applications of neural networks in the area of Control. Case studies and a term project.

Prerequisites

Elec Eng **3320.** ~~265.~~

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

Justification for change:

To delete EE 265 (Course no longer taught) and update course name

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 2076

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/22/15 11:25 am

Viewing: **ELEC ENG 5330 : Fuzzy Logic Control**

File: 2530.1

Last edit: 06/12/15 3:00 pm

Changes proposed by: martins

Programs referencing this course

CP ENG-BS: Computer Engineering BS

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	5330
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/12/15 2:40 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 06/12/15 3:00 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:46 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:43 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:24 am imorgan: Approved for Campus Curricula Committee Chair

Fuzzy Logic Control

Abbreviated Course Title: Fuzzy Logic Control

Catalog Description

A mathematical introduction to the analysis, synthesis, and design of control systems using fuzzy sets and fuzzy logic. A study of the fundamentals of fuzzy sets, operations on these sets, and their geometrical interpretations. Methodologies to design fuzzy models and feedback controllers for dynamical systems. Various applications and case studies.

Prerequisites

Elec Eng **3320.** ~~265.~~

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:

To delete EE 265 (Course no longer taught)

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 2530

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/22/15 11:28 am

Viewing: **ELEC ENG 5400 : Digital Signal Processing II**

File: 958.1

Last edit: 06/12/15 3:01 pm

Changes proposed by: martins

Other Courses referencing this course

In The Catalog Description:

ELEC ENG 6400 : Advanced Digital Signal Processing

In The Prerequisites:

ELEC ENG 6400 : Advanced Digital Signal Processing

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	5400
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/12/15 2:42 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 06/12/15 3:01 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:45 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:44 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:24 am imorgan: Approved for Campus Curricula Committee Chair

Digital Signal Processing **II**

Abbreviated Course Title: Digital **Signl** ~~Signal~~ Process **II**

Catalog Description

Spectral representations, sampling, quantization, z-transforms, digital filters and discrete transforms including the Fast Fourier transform.

Prerequisites

Elec Eng **3410 or Elec Eng 3420.** ~~267.~~

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 change:

To delete EE 267 (Course no longer taught) and to update course name

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 958

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/22/15 1:00 pm

Viewing: **ELEC ENG 5650 : Microwave and ~~And~~ Millimeter Wave Engineering And Design**

File: 486.1

Last edit: 07/15/15 1:45 pm

Changes proposed by: martins

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	5650
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/12/15 2:43 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 06/12/15 3:01 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:45 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:45 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:45 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 11:24 am imorgan: Approved for Campus Curricula Committee Chair

Microwave **and** ~~And~~ Millimeter Wave Engineering And Design

Abbreviated Course Title: Microwave&Millimtr Wave

Catalog Description

Introduce senior and graduate students to the concept of microwave **and** ~~an~~ millimeter wave engineering **and passive** ~~and~~ component design such as waveguide, **cavities,** couplers, detectors, mixers, etc., including network theory **and** ~~and~~ scattering matrix. Finally, their **specific** application in **the design of** various microwave circuits will be discussed.

Prerequisites

Elec Eng ~~3100,~~ 3600.

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:

To update catalog description and prerequisites

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 486

Preview Bridge

Course Inventory Change Request

Date Submitted: 05/22/15 11:30 am

Viewing: **ELEC ENG 6400 : Advanced Digital Signal Processing ~~II~~**

File: 1281.1

Last edit: 08/27/15 8:19 am

Changes proposed by: martins

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	6400
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/12/15 2:43 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 06/12/15 3:01 pm Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:45 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:46 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/26/15 9:36 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/26/15 10:21 am imorgan: Approved for Campus Curricula Committee Chair

Advanced Digital Signal Processing ~~II~~

Abbreviated	**Adv Digital Signl Proces**
Course Title	~~Digital Signal Proc II~~

Catalog Description

Continuation of Elec Eng 5400. Effects of discrete noise sources in digital signal processing; discrete spectral analysis of random signals; discrete time signal detection, estimation, and filtering algorithms.

Prerequisites

Elec Eng 5400 ~~and 5420~~ or **Elec Eng 5420; Elec Eng** 5440 or Stat 5643.

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

Justification for change:
To update course name

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1281
Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 04/01/15 3:27 pm

Viewing: **MUSIC 1133 : Highland Pipe Band**

File: 1466.1

Last edit: 08/19/15 10:46 am

Changes proposed by: denises

Requested Effective Change Date	Fall **2015** ~~2014~~
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	1133
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/08/15 2:53 pm lance: Approved for RPHILOSO Chair
2. 06/08/15 2:55 pm Kaylon Buckner (kleb6b):

Approved for CCC Secretary
3. 06/08/15 3:20 pm ivliyeva: Approved for Arts & Humanities DSCC Chair
4. 07/15/15 1:46 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:46 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:57 pm imorgan: Approved for Campus Curricula Committee Chair

Highland Pipe Band

Abbreviated Course Title: Highland Pipe Band

Catalog Description:

A musical unit of bagpipes and drums for performance at campus, military, and other functions. An elective not to satisfy humanities elective. Consent of instructor required.

Prerequisites

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:
Update per Lorie Francis.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1466
Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 04/01/15 3:28 pm

Viewing: **MUSIC 1142 : Collegium Musicum - King'S Musicke**

File: 2465.1

Last edit: 06/08/15 3:21 pm

Changes proposed by: denises

Requested Effective Change Date	Fall **2015** ~~2014~~
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	1142
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/08/15 2:53 pm lance: Approved for RPHILOSO Chair
2. 06/08/15 2:55 pm Kaylon Buckner (kleb6b):

Approved for CCC Secretary
3. 06/08/15 3:21 pm ivliyeva: Approved for Arts & Humanities DSCC Chair
4. 07/15/15 1:47 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:46 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:57 pm imorgan: Approved for Campus Curricula Committee Chair

Collegium Musicum - King'S Musicke

Abbreviated Course Title: Colleg - King's Musicke

Catalog Description

Study and performance of renaissance and early Baroque instrumental music using historical reproductions of period instruments and appropriate performance techniques. Performances on and off campus each semester. A skills course, not a

humanities elective.

Prerequisites

Consent of instructor and audition.

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:

Update per Lorie Francis

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 2465

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 04/01/15 3:28 pm

Viewing: **MUSIC 1143 : Collegium Musicum - Madrigal Singers**

File: 1171.1

Last edit: 06/08/15 3:21 pm

Changes proposed by: denises

Requested Effective Change Date	Fall **2015** ~~2014~~
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	1143
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 06/08/15 2:52 pm lance: Approved for RPHILOSO Chair
2. 06/08/15 2:55 pm Kaylon Buckner (kleb6b):

Approved for CCC Secretary

3. 06/08/15 3:21 pm ivliyeva: Approved for Arts & Humanities DSCC Chair
4. 07/15/15 1:47 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:46 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:57 pm imorgan: Approved for Campus Curricula Committee Chair

Collegium Musicum - Madrigal Singers

Abbreviated Course Title: Colleg - Madrigal Singrs

Catalog Description

Study and performance of renaissance and early Baroque vocal music using performance techniques appropriate to the period. Performances on and off campus each semester. A skills course, not a humanities elective.

Prerequisites

Consent of instructor and audition.

Field Trip Statement

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

Required for Majors	No
Elective for Majors	No

Justification for change:

Update per Lorie Francis

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1171

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 02/06/15 3:43 pm

Viewing: **PET ENG 3320 : Petrophysics**

File: 4189

Last edit: 08/19/15 11:19 am

Changes proposed by: reflori

Programs referencing this course

PE ENG-BS: Petroleum Engineering BS

Requested Effective Change Date	Fall 2015
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Petroleum Engineering (PET ENG)
Course Number	3320
Title	

In Workflow

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

Approval Path

1. 02/07/15 12:00 pm ikuenobe: Approved for RGEOSENG Chair
2. 02/09/15 9:21 am Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 02/17/15 10:08 am
   sraper: Approved for Engineering DSCC Chair
4. 04/09/15 12:18 pm
   Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 05/12/15 10:42 am
   Kaylon Buckner (kleb6b): Rollback to Pending CCC Agenda post for CCC Meeting Agenda
6. 07/15/15 1:50 pm
   Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
7. 08/19/15 11:20 am
   Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
8. 08/19/15 12:58 pm

imorgan:
Approved for
Campus Curricula
Committee Chair

Petrophysics

Abbreviated Course Title	Petrophysics

Catalog Description

Fundamental properties of petroleum reservoir rocks, including lithology, porosity, absolute permeability, pore surface area, relative and effective permeability, fluid saturations, rock wettability, capillary characteristics, acoustic properties, and electrical properties. Darcy's law for single phase linear horizontal and tilted flow and radial flow.

Prerequisites

Preceded or accompanied by both Pet Eng 2510 and Physics 1135.

Field Trip Statement

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

Justification for new course:

Most of this content is currently in Pet Eng 3520 Reservoir Engineering, but this is more foundational to reservoir engineering. Placing this in its own focused class enables Pet Eng 3520 to more fully develop true reservoir engineering concepts.

Semesters previously offered as an experimental course

None. This is a required course.

Co-Listed Courses:

Course Reviewer Comments

kleb6b (05/12/15 10:42 am): Rollback: Pending DC form

Key: 4189

Preview Bridge

Course Inventory Change Request

Date Submitted: 01/19/15 10:50 am

Viewing: **PET ENG 4710 : Finite Element Analysis with Applications in Petroleum Engineering**

File: 1975.1

Last edit: 08/19/15 11:20 am

Changes proposed by: reflori

Programs referencing this course

PE ENG-BS: Petroleum Engineering BS

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Petroleum Engineering (PET ENG)
Course Number	4710
Title	

In Workflow

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

Approval Path

1. 02/07/15 12:01 pm ikuenobe: Approved for RGEOSENG Chair
2. 02/09/15 9:22 am Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:49 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:51 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:21 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:58 pm imorgan: Approved for Campus Curricula Committee Chair

Finite Element Analysis with Applications in Petroleum Engineering

Abbreviated Course Title: FEA Applied in Pet Eng

Catalog Description

This course introduces finite element analysis (FEA) methods and applications of FEA in subsurface engineering. The course is intended to provide a fundamental understanding of FEA software and experience in creating meshes for petroleum reservoirs or other subsurface features.

Prerequisites

Pet Eng 3520, Geology 3310, and Math 3304.

Field Trip Statement

Credit Hours	LEC: **2** ~~3~~	LAB: 1	IND: 0	RSD: 0
Total: **3** ~~4~~				
Required for Majors	**Yes**			
Elective for Majors	**No**			

Justification for change:

Making other Pet Eng curriculum changes. Reducing this to 3 hrs to keep total degree credit hours at 129.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1975
Preview Bridge

Course Inventory Change Request

Date Submitted: 06/23/15 4:43 pm

Viewing: **PET ENG 6231 : Drilling Optimization**

File: 2185.4

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

Last edit: 06/23/15 4:43 pm

Changes proposed by: reflori

Requested Effective Change Date	Spring 2016
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Petroleum Engineering (PET ENG)
Course Number	6231
Title	

In Workflow

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

Approval Path

1. 06/24/15 10:11 pm ikuenobe: Approved for RGEOSENG Chair
2. 06/25/15 7:48 am Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 06/29/15 9:55 am sraper: Approved for Engineering DSCC Chair
4. 07/15/15 1:52 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:46 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 1:00 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. May 4, 2015 by reflori (2185.1)

Drilling Optimization

Abbreviated Course Title: Drilling Optimization

Catalog Description

Optimization of the drilling process based on geomechanical model of the subsurface. Topics include drilling hydraulics, drilling bits, selection of operational

parameters and analysis of drilling time and cost.

Prerequisites

Pet Eng **4210.** ~~3210.~~

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 change:

Pet Eng 4210 is the correct pre-requisite.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 2185

Preview Bridge

Course Inventory Change Request

Date Submitted: 07/22/15 6:01 pm

Viewing: **PHILOS 3205 : Early Modern Philosophy ~~History Of Philosophy II~~**

File: 1754.1

Last edit: 07/22/15 6:01 pm

Changes proposed by: denises

Requested Effective Change Date	**Spring 2016** ~~Fall 2014~~
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	3205
Title	

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. lshelton
11. Peoplesoft

Approval Path

1. 07/23/15 8:01 am lance: Approved for RPHILOSO Chair
2. 07/23/15 8:06 am Kaylon Buckner (kleb6b): Approved for CCC

Secretary
3. 07/23/15 2:41 pm ivliyeva: Approved for Arts & Humanities DSCC Chair
4. 07/29/15 10:31 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:46 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 1:00 pm imorgan: Approved for Campus Curricula Committee Chair

Early Modern Philosophy ~~History Of Philosophy II~~

Abbreviated Course Title	**Early Modern Philosophy** ~~Hist Of Philosophy II~~

Catalog Description

Principal figures in ~~A study of selected philosophical works from Descartes to Hegel to Kant emphasizing~~ the **development of rationalism, empiricism,** ~~problems of knowledge~~ and **skepticism in early modern Europe, from Descartes through Hume.** ~~reality.~~

Prerequisites

A previous class in philosophy is recommended. ~~An introductory (below 2000) level Philosophy course.~~

Field Trip Statement

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

Justification for change:

This is part of an online collaborative program with UMSL to reduce the need to offer these classes independently at MST and UMSL.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

lance (02/23/15 2:15 pm): Rollback: Second line of description--I bet they mean Augustine instead of August.

kleb6b (02/23/15 3:10 pm): Rollback: Cannot change course # and title

kleb6b (02/23/15 3:58 pm): Rollback: Rollback

kleb6b (07/06/15 8:15 am): Rollback: Lecture or lab hours?

Key: 1754
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 05/20/15 1:22 pm

Viewing: **BIO SCI 4001.001 : Mammal Ecology**

File: 4215

Last edit: 08/19/15 11:29 am

Changes proposed by: niyogid

Requested Effective Change Date	Fall 2015
Department	Biological Sciences
Discipline	Biological Sciences (BIO SCI)
Course Number	4001
Topic ID	001
Experimental Title	Mammal Ecology
Experimental Abbreviated Course Title	Mammal Ecology
Instructors	staff

Experimental Catalog Description

This course will build from basic knowledge of human biology and explore the ecology and adaptations of the major mammalian orders. A survey of local mammals and explorations of the field techniques used to study mammal ecology will be integrated. Field trips (about 10 total) will be conducted at a new field station. There is no cost for these trips.

Prerequisites

Bio Sci 1223 or Bio Sci 2263.

Field Trip Statement

Field trips (about 10 total) will be conducted at a new field station. There is no cost for these trips.

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

In Workflow

1. RBIOLSCI Chair
2. CCC Secretary
3. Sciences DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. Registrar

Approval Path

1. 05/20/15 5:43 pm aronstam: Approved for RBIOLSCI Chair
2. 05/21/15 8:01 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 07/31/15 10:19 am imorgan: Approved for Sciences DSCC Chair
4. 07/31/15 10:28 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:29 am

Total: 3

Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:47 pm imorgan: Approved for Campus Curricula Committee Chair

Justification for new course:
This new class will fill a need for students interested in wildlife ecology, management, and conservation.

Semester(s) previously taught
NA

Co-Listed Courses:

Course Reviewer Comments
imorgan (07/31/15 10:19 am): One member of the DSCC expressed concern about possible conflicts between the field trips and other classes in the student's schedule.

Key: 4215
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 05/26/15 4:45 pm

Viewing: **CHEM 6001.001 : Advanced Analytical Techniques for Small Biomolecules and Nanoparticles**

File: 4217

Last edit: 08/19/15 11:30 am

Changes proposed by: woelkk

Requested Effective Change Date	Fall 2015
Department	Chemistry
Discipline	Chemistry (CHEM)
Course Number	6001
Topic ID	001
Experimental Title	Advanced Analytical Techniques for Small Biomolecules and Nanoparticles
Experimental Abbreviated Course Title	Adv. Analytical Tech
Instructors	Yinfa Ma

Experimental Catalog Description

The class is designed to teach graduate students how to use advanced analytical techniques for quantitative analysis of small biomolecules in biological and environmental samples at ultra-low levels (ng/L) or even at single nanoparticle level. Techniques include LC-MS/MS, single-particles inductively-coupled-plasma mass spectrometry (SP-ICP-MS), and others.

Prerequisites

CHEM 5510 or CHEM 5710 or CHEM 6510 or CHEM 6555.

Field Trip Statement

In Workflow

1. RCHEMIST Chair
2. CCC Secretary
3. Sciences DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. Registrar

Approval Path

1. 05/26/15 4:48 pm woelk (woelkk): Approved for RCHEMIST Chair
2. 05/27/15 7:45 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 07/31/15 10:37 am imorgan: Approved for Sciences DSCC Chair
4. 07/31/15 10:41 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:30 am

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

Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:47 pm imorgan: Approved for Campus Curricula Committee Chair

Justification for new course:

Identification and quantification of small biomolecules and nanoparticles in biological and environmental samples have not been systematically taught in any of S&T's analytical chemistry courses. Due to the wide applications and potential of these techniques, it is crucial that graduate students, especially those specialized in analytical chemistry, understand how to conduct qualitative and quantitative analyses of small biomolecules and nanoparticles in biological and environmental matrices.

Semester(s) previously taught

Co-Listed Courses:

Course Reviewer Comments

Key: 4217
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 05/12/15 5:15 pm

Viewing: **COMP SCI 1001.001 : Data Structures Laboratory**

File: 4210

Last edit: 08/19/15 11:30 am

Changes proposed by: tauritzd

Requested Effective Change Date	Spring 2016
Department	Computer Science
Discipline	Computer Science (COMP SCI)
Course Number	1001
Topic ID	001
Experimental Title	Data Structures Laboratory
Experimental Abbreviated Course Title	Data Structures Lab
Instructors	TBD

Experimental Catalog Description

Hands-on instruction in programming development tools such as version control systems, integrated development environments, debuggers, profilers, and event-based programming environments. Exercises will complement the concepts presented in COMP SCI 1510.

Prerequisites

Preceded or accompanied by COMP SCI 1510.

Field Trip Statement

n/a

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

Total: 1

In Workflow

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

Approval Path

1. 05/12/15 6:04 pm Sajal Das (sdas): Approved for RCOMPSCI Chair
2. 05/13/15 7:40 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 07/31/15 11:11 am imorgan: Approved for Sciences DSCC Chair
4. 07/31/15 11:16 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:31 am

Justification for new course:

This lab addresses a weakness identified by ABET in preparing our students to connect to application domains and use modern development methods.

Semester(s) previously taught

None

Co-Listed Courses:

Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:56 pm imorgan: Approved for Campus Curricula Committee Chair

Course Reviewer Comments

Key: 4210
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 05/13/15 9:20 pm

Viewing: **IS&T 4001.001 : Human and Organizational Factors in Information Assurance**

File: 4212

Last edit: 07/15/15 1:53 pm

Changes proposed by: barryf

Requested Effective Change Date	Spring 2016
Department	Business and Information Technology
Discipline	Info Science & Technology (IS&T)
Course Number	4001
Topic ID	001
Experimental Title	Human and Organizational Factors in Information Assurance
Experimental Abbreviated Course Title	Information Assurance
Instructors	Nathan Twyman

Experimental Catalog Description

This class provides an in-depth examination of human and organizational factors in cybersecurity and information assurance. Examines current challenges to protecting the integrity, availability, and confidentiality of information, as well as tools, methods, principles, and analytics for fraud prevention, insider threat detection, and forensic investigations.

Prerequisites

IS&T 3333 or IS&T 6336 or Comp Sci 3600 or another introductory cybersecurity or information assurance course.

Field Trip Statement

In Workflow

1. RBUSADMN Chair
2. CCC Secretary
3. Social Sciences DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. Registrar

Approval Path

1. 05/13/15 9:38 pm siauk: Approved for RBUSADMN Chair
2. 05/15/15 7:42 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 05/18/15 4:22 pm barryf: Approved for Social Sciences DSCC Chair
4. 07/15/15 1:56 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:47 am Kaylon Buckner

(kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:56 pm imorgan: Approved for Campus Curricula Committee Chair

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

Justification for new course:
This area continues to grow in importance.

Note that IS&T 6001 is being proposed in parallel. It will be taught with IS&T 4001; the 6001 course will have additional projects and homework.

Semester(s) previously taught

Co-Listed Courses:

Course Reviewer Comments

Key: 4212
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 08/19/15 1:36 pm

Viewing: **IS&T 5001.001 : Privacy and Information Security Law**

File: 4241

Last edit: 08/19/15 2:04 pm

Changes proposed by: kleb6b

Requested Effective Change Date	Fall 2015
Department	Business and Information Technology
Discipline	Info Science & Technology (IS&T)
Course Number	5001
Topic ID	001
Experimental Title	Privacy and Information Security Law
Experimental Abbreviated Course Title	Privacy & Info Sec. Law
Instructors	Randy Canis, J.D.

Experimental Catalog Description

Explores a variety of issues concerning the use, disclosure, and protection of information (personal, organizational, health, and financial) from a legal perspective. A focus on understanding, planning, protecting, and responding to data breaches and other information risk and threats. Case studies based on litigation are reviewed and analyzed.

Prerequisites

Understanding of Management Information Systems.

Field Trip Statement

In Workflow

1. RBUSADMN Chair
2. CCC Secretary
3. Social Sciences DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. Registrar

Approval Path

1. 08/19/15 1:45 pm siauk: Approved for RBUSADMN Chair
2. 08/19/15 1:51 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 08/19/15 1:53 pm barryf: Approved for Social Sciences DSCC Chair
4. 08/19/15 2:04 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 2:04 pm Kaylon Buckner (kleb6b):

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

Approved for CCC Meeting Agenda
6. 08/19/15 2:05 pm imorgan: Approved for Campus Curricula Committee Chair

Justification for new course:
New experimental course.

Semester(s) previously taught

Co-Listed Courses:

Course Reviewer Comments **kleb6b (08/19/15 1:35 pm):** Rollback: Rollback

Key: 4241
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 05/13/15 9:20 pm

Viewing: **IS&T 6001.001 : Advanced Human and Organizational Factors in Information Assurance**

File: 4213

Last edit: 07/15/15 1:56 pm

Changes proposed by: barryf

Requested Effective Change Date	Spring 2016
Department	Business and Information Technology
Discipline	Info Science & Technology (IS&T)
Course Number	6001
Topic ID	001
Experimental Title	Advanced Human and Organizational Factors in Information Assurance
Experimental Abbreviated Course Title	Adv. Info Assurance
Instructors	Nathan Twyman

Experimental Catalog Description

This class provides an in-depth examination of human and organizational factors in cybersecurity and information assurance. Examines current challenges to protecting the integrity, availability, and confidentiality of information, as well as tools, methods, principles, and analytics for fraud prevention, insider threat detection, and forensic investigations.

Prerequisites

IS&T 3333 or IS&T 6336 or Comp Sci 3600 or another introductory cybersecurity or information assurance course.

Field Trip Statement

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. Registrar

Approval Path

1. 05/13/15 9:39 pm siauk: Approved for RINFSCTE Chair
2. 05/15/15 7:42 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 05/18/15 4:22 pm barryf: Approved for Social Sciences DSCC Chair
4. 07/15/15 2:00 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:47 am Kaylon Buckner (kleb6b):

Approved for CCC Meeting Agenda
6. 08/19/15 12:57 pm imorgan: Approved for Campus Curricula Committee Chair

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

Justification for new course:
This area continues to grow in importance.

Note that IS&T 4001 is being proposed in parallel. It will be taught with IS&T 6001; the 6001 course will have additional projects and homework.

Semester(s) previously taught

Co-Listed Courses:

Course Reviewer Comments

Key: 4213
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 07/06/15 9:56 am

Viewing: **MECH ENG 6001.001 : Advanced Optical Materials and Structures**

File: 4233

Last edit: 07/06/15 9:56 am

Changes proposed by: kleb6b

Requested Effective Change Date	Fall 2015
Department	Mechanical & Aerospace Engineering
Discipline	Mechanical Engineering (MECH ENG)
Course Number	6001
Topic ID	001
Experimental Title	Advanced Optical Materials and Structures
Experimental Abbreviated Course Title	Adv Optical Materials
Instructors	Xiaodong Yang

Experimental Catalog Description

Fundamental principles and advanced topics in optical materials and structures covering areas of photonics, plasmonics and metamaterials, and nanofabrication techniques.

Prerequisites

Elec Eng 5200 or equivalent.

Field Trip Statement

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

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. Registrar

Approval Path

1. 07/06/15 10:00 am drallmei: Approved for RMECHENG Chair
2. 07/06/15 10:01 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 07/27/15 10:16 am sraper: Approved for Engineering DSCC Chair
4. 07/29/15 10:32 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:47

Justification for new course:

This is an important area for current research in mechanical engineering and other fields.

Semester(s) previously taught

None

Co-Listed Courses:

Course Reviewer Comments

am
Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:57 pm
imorgan: Approved for Campus Curricula Committee Chair

Key: 4233
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 07/09/15 10:51 am

Viewing: **PET ENG 5001.001 : Geomechanical Applications in Petroleum Engineering**

File: 4237

Last edit: 07/13/15 8:09 am

Changes proposed by: sahc55

Requested Effective Change Date	Fall 2015
Department	Geosciences and Geological and Petroleum Engineering
Discipline	Petroleum Engineering (PET ENG)
Course Number	5001
Topic ID	001
Experimental Title	Geomechanical Applications in Petroleum Engineering
Experimental Abbreviated Course Title	Geomech Apps in Pet Eng
Instructors	Steven Hilgedick

Experimental Catalog Description

This course expands upon topics from Mechanical Earth Modeling and covers advanced applications in Production, Reservoir, and Drilling Engineering such as Prediction of Solids Production, Hydraulic Fracturing Design, Seal Integrity, Pore Pressure Coupling, Compaction and Subsidence, and Wellbore Stability for Deviated Wellbores.

Prerequisites

Pet Eng 4720.

Field Trip Statement

In Workflow

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

Approval Path

1. 07/10/15 5:56 pm ikuenobe: Approved for RGEOSENG Chair
2. 07/15/15 8:10 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 07/27/15 10:16 am sraper: Approved for Engineering DSCC Chair
4. 07/29/15 10:34 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:47 am Kaylon Buckner

(kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:59 pm imorgan: Approved for Campus Curricula Committee Chair

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

Justification for new course:

This course takes fundamentals from Mechanical Earth Modeling (MEM) and builds upon them by including advanced topics such as alternative failure criterion to Mohr-Coulomb, analysis using pore pressure coupling, static material property estimation from dynamic well log measurements, and stresses near cased wellbores. The course will discuss the application of MEM to multiple petroleum engineering problems in Production, Reservoir, and Drilling Engineering. These topics are not covered Advanced Mechanical Earth Modeling Course which is a 6xxx level course which focuses on the numerical modeling side of MEM. This will help to improve our offering for undergraduate and graduate students interested in elective courses in MEM, which is a cornerstone for the Petroleum Engineering Program.

Semester(s) previously taught: NA

Co-Listed Courses:

Course Reviewer Comments

Key: 4237
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 06/24/15 4:26 pm

Viewing: **PHILOS 3001.001 : Kant and 19th Century Philosophy**

File: 4230

Last edit: 08/21/15 8:23 am

Changes proposed by: denises

Requested Effective Change Date	Spring 2016
Department	Arts, Languages, & Philosophy
Discipline	Philosophy (PHILOS)
Course Number	3001
Topic ID	001
Experimental Title	Kant and 19th Century Philosophy
Experimental Abbreviated Course Title	Kant & 19th Century Phil
Instructors	Finch, Jonathan

Experimental Catalog Description

Study of major 19th century philosophers, including Kant, Hegel, Nietzsche, Mill, and Pierce. The 20th century is difficult to understand without evaluating the 19th century background concepts.

Prerequisites

Any philosophy course below 3000 is recommended.

Field Trip Statement

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

Justification for

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. Registrar

Approval Path

1. 06/29/15 4:04 pm lance: Approved for RPHILOSO Chair
2. 07/06/15 8:14 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 07/06/15 10:45 am ivliyeva: Approved for Arts & Humanities DSCC Chair
4. 07/15/15 2:01 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 10:47 am

new course:

Will be part of an online collaborative agreement with UMSL

Semester(s)
previously taught

None

Co-Listed
Courses:

Course Reviewer
Comments

Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 08/19/15 12:59 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4230
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 05/22/15 8:28 am

Viewing: **POL SCI 4001.001 : Environmental Politics and Policy**

File: 4216

Last edit: 08/19/15 11:34 am

Changes proposed by: lgragg

Requested Effective Change Date	Spring 2016
Department	History and Political Science
Discipline	Political Science (POL SCI)
Course Number	4001
Topic ID	001
Experimental Title	Environmental Politics and Policy
Experimental Abbreviated Course Title	Environmental Politics
Instructors	David Robertson

Experimental Catalog Description

This course explores environmental ideas and public policy toward land use, water and air pollution, energy, global warming, solid and hazardous waste, endangered species, population growth and international environmental co-operation.

Prerequisites

Political Science 1200, or History 1300, or History 1310.

Field Trip Statement

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

Justification for

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. Registrar

Approval Path

1. 05/22/15 8:28 am lgragg: Approved for RHISTORY Chair
2. 05/22/15 8:32 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 05/22/15 8:43 am ivliyeva: Approved for Arts & Humanities DSCC Chair
4. 07/15/15 2:03 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:34 am Kaylon Buckner

new course:

This is a course for visiting Maxwell C. Weiner Distinguished Professor of the Humanities who will be on campus in the spring 2016 semester.

Semester(s) previously taught

N/A

Co-Listed Courses:

(kleb6b): Approved for CCC Meeting Agenda

6. 08/19/15 12:59 pm imorgan: Approved for Campus Curricula Committee Chair

Course Reviewer Comments

Key: 4216

Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 06/08/15 1:31 pm

Viewing: **THEATRE 2001.001 : Voice, Diction and Interpretation**

File: 4218

Last edit: 08/19/15 11:35 am

Changes proposed by: denises

Requested Effective Change Date	Spring 2016
Department	Arts, Languages, & Philosophy
Discipline	Theatre (THEATRE)
Course Number	2001
Topic ID	001
Experimental Title	Voice, Diction and Interpretation
Experimental Abbreviated Course Title	Voice and Diction
Instructors	Jeanne Stanley

Experimental Catalog Description

Training the speaking voice; study of vocal mechanism, breathing, projection, articulation, enunciation; practical application of speaking principles in oral interpretation reading; mastering clarity of speech through vocal exercises.

Prerequisites

Field Trip Statement

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

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. Registrar

Approval Path

1. 06/08/15 2:52 pm lance: Approved for RPHILOSO Chair
2. 06/08/15 2:55 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 06/08/15 3:22 pm ivliyeva: Approved for Arts & Humanities DSCC Chair
4. 07/15/15 2:06 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 08/19/15 11:35 am Kaylon Buckner

Justification for new course:

This it to create the co listed SP&M S 2001 Voice, Diction and Interpretation course.

Semester(s) previously taught

Spring 2013

Co-Listed Courses:

SP&M S 2001 - Special Topics

(kleb6b): Approved for CCC Meeting Agenda

6. 08/19/15 12:59 pm imorgan: Approved for Campus Curricula Committee Chair

Course Reviewer Comments

Key: 4218

Preview Bridge