Page: 1/25

Date: 4/12/2013 2:21:14 PM



Missouri University of Science and Technology

Formerly University of Missouri-Rolla

Minutes of the Campus Curricula Committee Meeting April 3, 2013 12 pm, Room 117 Fulton Hall

Attendees: Lahne Black, Barry Flachsbart, Irina Ivliyeva, Keith Nisbett, Steve Raper, Tom Schuman, Daniel Tauritz, and Jennifer Thorpe.

The following curriculum forms were discussed and approved:

Degree Change Forms:	• •	
DC #0454	DC #0467	DC #0471
DC #0455	DC #0468	DC #0473
DC #0456		
Course Change Forms:		
CC #8307	CC #8393	CC #8427
CC #8370	CC #8394	CC #8443
CC #8371	CC #8395	CC #8444
CC #8372	CC #8396	CC #8448
CC #8373	CC #8397	CC #8449
CC #8374	CC #8398	CC #8450
CC #8375	CC #8399	CC #8451
CC #8376	CC #8400	CC #8452
CC #8377	CC #8401	CC #8453
CC #8378	CC #8402	CC #8454
CC #8380	CC #8403	CC #8455
CC #8381	CC #8404	CC #8456
CC #8382	CC #8405	CC #8457
CC #8383	CC #8408	CC #8458
CC #8384	CC #8409	CC #8459
CC #8387	CC #8410	CC #8460
CC #8388	CC #8411	CC #8461
CC #8389	CC #8412	CC #8462
CC #8390	CC #8413	CC #8463
CC #8391	CC #8425	
CC #8392	CC #8426	

Page 1

Office of the Registrar • 103 Parker Hall • 300 West 13th Street • Rolla, MO 65409-0930 Phone: 573-341-4181 • Fax: 573-341-4362 • Email: registrar@mst.edu • Web: http://registrar.mst.edu

From: 573 341 4362 Pa

Page: 2/25

Date: 4/12/2013 2:21:14 PM



Missouri University of Science and Technology

Formerly University of Missouri-Rolla

Experimental Course Forms:

EC #2459

EC #2461

EC #2462

The items below were tabled pending further action/clarification to be provided by the academic department responsible for each:

DC #0450, Bachelor of Science in Mechanical Engineering.

DC #0451, Bachelor of Science in Aerospace Engineering

DC #0466, Materials Science and Engineering, Minor in Materials Science and Engineering.

DC #0472, Manufacturing Engineering, Master of Science in Manufacturing Engineering.

CC #8385, Ceramic Engineering 261, Materials Senior Design I.

CC #8386, Ceramic Engineering 262, Materials Senior Design II.

CC #8406, Metallurgical Engineering 216, Mechanical Testing of Materials.

CC #8407, Metallurgical Engineering 218, Microstructural Development Laboratory.

CC #8445, Metallurgical Engineering 261, Materials Senior Design I.

CC #8446, Metallurgical Engineering 262, Materials Senior Design II.

CC #8447, Ceramic Engineering 262, Materials Senior Design II.

The items below were returned to the department due to lack of requested action:

DC #0469, Civil, Architectural and Environmental Engineering, Bachelor of Science in Civil Engineering

DC #0470, Civil, Architectural and Environmental Engineering, Bachelor of Science in Civil Engineering

The meeting adjourned at 1:45 pm

Daniel Tauritz, Chair

Missouri S&T Campus Curricula Committee

Page 2

Office of the Registrar • 103 Parker Hall • 300 West 13th Street • Rolla, MO 65409-0930 Phone: 573-341-4181 • Fax: 573-341-4362 • Email: registrar@mst.edu • Web: http://registrar.mst.edu

From: 573 341 4362 Page: 3/25 Date: 4/12/2013 2:21:14 PM

Effective Year: FS2013 Effective Term: Summer Fall Spring (Creating or modifying a degree program must be effective for a Fall term)	D-00
Degree Change Form (DC)	
This form is to be used for creating or modifying degree programs, emphasis areas, and minors.	
Title of degree program, emphasis area, or minor: Electrical Engineering B.S. Program (General & all 7 Emphasis Areas)	
Department: Electrical & Computer Engineering	
Briefly describe action requested (Attach documentation as appropriate): The EI Eng Elective D, Elective E, and free elective courses are updated. The EI Eng 202 and Cp E 202 requirements are changed to allow only 1 credit hour with pass-fail grading (Approved at the Jan. 24, 2013 ECE Faculty Meeting).	Eng e
The El Eng Elective D footnote (16) from the the catalog will be modified: El Eng Elective D must be a 300-level El Eng or Cp Eng course with at least a 3-hour lecture component. El Eng and Cp Eng 300, 38X, 390, 391, and 392 may not be used for Elective D.	
The El Eng Elective E footnote (17) from the the catalog will be modified: El Eng Elective E may be any 200 or 300-level El Eng or Cp Eng course except El Eng 202, 28X, 391, and 392 and Cp Eng 202, 300, 390, 391, and 392.	
The free elective footnote (18) from the the catalog will be modified: Students are required at least three credit hours. El Eng. and Cp Eng 28X, 391, and 392 may not be used for free electives. No more than one credit hour (pass fail only) of El Eng 202 or Cp Eng 202 may be applied to the B.S. degree for free electives.	
Recommended by Department: Chair signature) Date: 129	· <u>(</u> (3
Recommended by: Discipline Specific Curricula Committee (Chair signature) Date: 4/12	1 <u>11</u> 3
Approved by Curricula Committee: 2 (Chale signature)	12013
Approved by Faculty Senate: Date: Date:	_

01/29/13

(Revised 1/31/2008)

From: 573 341 4362 Page: 4/25 Date: 4/12/2013 2:21:15 PM

Effective Year: FS2013	013-EE-000-00
Degree Change Form (DC)	
This form is to be used for creating or modifying degree programs, emphasis area	s, and minors.
Title of degree program, emphasis area, or minor: Electrical Engineering B.S. Program (General & all 7 Emphasis Areas)	
Department: Electrical & Computer Engineering	
Briefly describe action requested (Attach documentation as appropriate) Update the degree footnotes. The El Eng 217 and El Eng 218 prerequisites have These courses may be taken with just El Eng 153 and Math 204 each with a gra and passing the El Eng Advancement Exam II. Approved at the April 16, 2012 EG.	been changed. de of "C" or better
The El Eng footnote (9) from the the catalog will be modified (modify list): Students must earn a passing grade in the El Eng Advancement Exam II (association) before they enroll in El Eng 205, 207, 208, 209, 215, 216, 217, 218, 253, 200 other courses with El Eng 153 as a prerequisite.	ated with El Eng 255, or 271, or
The recommended degree progression in the catalog should apply footnote (9) to Eng 218. Also, El Eng 217 and El Eng 218 should appear in the First Semester Junior year. Eng 215 and El Eng 216 should appear in the Second Semester Junior year.	o El Eng 217 and El unior year and El
Recommended by Department: Chair signature)	Date: 1/19/13
Recommended by: (Chair signature)	Date: <u>62/19/1</u> }
Approved by Curricula Committee: (Chair signature)	Date: 4/12/2013
Approved by Faculty Senate:(Chair signature)	Date:
01/29/13	(Revised 1/31/2008)

From: 573 341 4362 Page: 5/25 Date: 4/12/2013 2:21:15 PM

Effective Year: FS2013 Effective Term: Summer Fall Spring (Creating or modifying a degree program must be effective for a Fall term)
Degree Change Form (DC)
This form is to be used for creating or modifying degree programs, emphasis areas, and minors.
Title of degree program, emphasis area, or minor: Computer Engineering B.S. Program
Department: Electrical & Computer Engineering
Briefly describe action requested (Attach documentation as appropriate): The Cp Eng Elective B, Elective C, Elective D, and free elective courses are updated. The Cp Eng 202 and El Eng 202 requirements are changed to allow only 1 credit hour with pass-fail grading (Approved at the Jan. 24, 2013 ECE Faculty Meeting).
The Cp Eng Electives B, C, D footnote (15) from the the catalog will be modified: Cp Eng Electives B, C, or D must be a 200 or 300-level courses from an approved list of science, mathematics, and engineering courses. This list includes all 200 or 300-level Cp Eng, El Eng, and Cp Sc courses except required Cp Eng courses, required El Eng courses, required Cp Sc courses, Cp Eng 391 and 392, Cp Eng 202, El Eng 391 and 392, El Eng 202, El Eng 28X, Cp Sc 397, and Cp Sc 202.
The Cp Eng Elective B, C, D, footnote (16) from the the catalog will be modified: Cp Eng Elective B, C, and D cannot include more than three hours of Cp Eng or El Eng 300 or 390.
The free elective footnote (18) from the the catalog will be modified: Students are required at least three credit hours. El Eng. and Cp Eng 28X, 391, and 392 may not be used for free electives. No more than one credit hour (pass-fail only) of Cp Eng 202 or El Eng. 202 may be applied to the B.S. degree for free electives.
Recommended by Department: Chair signature Chair signature
Recommended by: Date: 02/19/13 Discipline Specific Curricula Committee (Chair signature)
Approved by Curricula Committee: Denil Funk Date: 4/12/2013

(Revised 1/31/2008)

Date: _____

Approved by Faculty Senate: _____

(Chair signature)

From: 573 341 4362 Page: 6/25 Date: 4/12/2013 2:21:15 PM

Effective Year: 2013 Effective Term: Summer Fall Spring C (Creating or modifying a degree program must be effective for a Fall term)	O
Degree Change Form (DC)	
This form is to be used for creating or modifying degree programs, emphasis areas, and minors.	
Title of degree program, emphasis area, or minor: Bachelor of Science Psychology Bachelor of Arts Psychology	
Department: Psychological Science	
Briefly describe action requested (Attach documentation as appropriate):	
The department is requesting that the following course be added to our list of Capstone courses for the department degrees.	
Psych 377 - Psychology in Media	
(Catalog revisions: 7. A har BA-Bychology 8. A har BS-Psychology	
Recommended by Department: Aways for Date: 2/8/13	
Recommended by: Date: 2/19/201 Discipline Specific Curricula Committee (Chair signature)	/3
Approved by Curricula Committee: Date: 4/12/21/3 (Chair signature)	
Approved by Faculty Senate: Date: Date:	

(Revised 9/12/2011)

Page: 7/25

From: 573 341 4362 Date: 4/12/2013 2:21:16 PM

Effective Year: 2013	DC # 0468-2013-PSych-
Effective Term: Summer 🗌 🛮 Fail 🖾 Spring 🔲	· •
(Creating or modifying a degree program must be effective for	r a Fail term) are a Fail term)

Degree Change Form (DC)

This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:

Bachelor of Science Psychology Bachelor of Science Psychology (Secondary Education Emphasis)

Department: Psychological Science

Briefly describe action requested (Attach documentation as appropriate):

Currently, the science and mathematics requirements for the two programs listed above indicate that the student must take Computer Science 53, 73, or 77, or IST 51 (BS in psychology) or Computer Science 53, 73, or 77 (BS in psychology, secondary education emphasis). Given that the computer science courses require a lab, but only one lab is listed as an optional course (CS 77), we wish to clarify the course and lab sequences that are acceptable as well as add one additional lab and course sequence as an option (CS 74 & 78).

Therefore, the requirement for the BS in psychology would include: Computer Science 53 and 54; of 73 and 77; or 74 and 78, or IST 51. The requirement for the BS in psychology (secondary education emphasis) would include: Computer Science 53 and 54, 73 and 77, or 74 and 78.

Recommended by Department: \(\text{\lambda u.c.} \) \(\text{\lambda partment} \) \(\lam	Date: <u>2/8/</u> 13
Recommended by: Discipline Specific Curricula Committee (Chair signature)	Date: 2/19/201
Approved by Curricula Committee: (Chair signature)	Date: 4/12/2013
Approved by Faculty Senate:(Chair signature)	Date:

(Revised 9/12/2011)

From: 573 341 4362 Page: 8/25 Date: 4/12/2013 2:21:16 PM

Effective Year: 2013 Effective Term: Summer ☐ Fall ☒ Sp (Creating or modifying a degree program must be	DC # 0471-201 ring [] be effective for a Fall term)	.3-IST - 000-00					
Degree Change Form (DC)							
This form is to be used for creating or mo	odifying degree programs, emphasis areas	s, and minors.					
Title of degree program, emphasis area Information Science and Technology B.S., N		nent					
Pepartment: Business and Information Technology The Minor in Digital Supply Chain Management requires 15 hours of course work, as follows: 1) One of the following courses: BUS 360 Business Operations ME 253 Manufacturing 2) ERP 347 Supply Chain Management Systems in an ERP Environment 3) One of the following courses: ERP 342 Customer Relationship Management In ERP Environment ME 360 / AE 360 Probabilistic Engineering Design 4) Two of the following courses*: ERP 345 Use of Business Intelligence ERP 346 Enterprise Resource Planning Systems Design and Implementation ME 308 Rapid Product Design and Optimization ME 356 Design for Manufacture ME 357 / EMgt 354 Integrated Product and Process Design ME 363 Principles and Practice of Computer Alded Design							
* Non Business & Information Technology stelectives.	tudents must select ERP 346 as one o	if the two					
Briefly describe action requested (Attac	ch documentation as appropriate)	;					
Approve creation of this Minor. See attache	d document.						
Recommended by Department:	(Chair signature)	Date: 2/19/13					
Recommended by: Discipline Specific Curricula Committee	(Chair signature)	Date: 3/7/ <u>/</u> 3					
Approved by Curricula Committee:	(Chair signature)	Date: 4/12/2013					
Approved by Faculty Senate:	(Chair signature)	Date:					

02/19/13 (Revised 9/12/2011)

From: 573 341 4362 Page: 9/25 Date: 4/12/2013 2:21:17 PM

Concurrence by Program:

(Manufacturing Engineering)

(Chair signature)

Date: 2-20-30/3

Undergraduate Minor: Digital Supply Chain Management, Additional Information

Overview

Success in today's marketplace requires that organizations deliver products and services that provide easily identified value for their customers. This minor draws on strengths within two departments to integrate source (strategic procurement and supply management), production (manufacturing and service operations), and delivery processes (demand fulfillment), with a focus on the use of information technologies as the critical enabler of supply chain efficiencies and responsiveness.

The Digital Supply Chain Management Minor is designed to give the student the tools and ideas that help shape and define the various components of value creation. Students can gain knowledge and skills in the full spectrum of supply chain activities: supplier relationships, purchasing management, operations and inventory management, logistics and transportation, quality management, and information technology.

Contributing Faculty

Dr. Craig Claybaugh (Business and Information Technology)

Dr. Cassie Elrod (Business and Information Technology)

Dr. Bih-Ru Lea (Business and Information Technology)

Dr. Frank Liou (Manufacturing Engineering)

Dr. Vincent Yu (Business and Information Technology)

Effective Year: 2013 Effective Term: Summer Fall Spring (Creating or modifying a degree program must be effective for a Fall term.)

Degree Change Form (DC)

This form is to be used for creating or modifying degree programs, emphasis areas, and minors.

Title of degree program, emphasis area, or minor:

B.S. in Mechanical Engineering, Manufacturing Processes Emphasis Area

Department: Mech & Aero Engineering

Briefly describe action requested (attach documentation as appropriate):

Modify the description for the emphasis area as documented on the accompanying page.

Date: 4/12/2013 2:21:17 PM

Page: 10/25

(Chair signature)

From: 573 341 4362

Recommended by DSCC:

Approved by Curricula Committee:

Approved by Faculty Senate: _

_ Date:

From: 573 341 4362 Page: 11/25 Date: 4/12/2013 2:21:17 PM

Manufacturing Emphasis Area Modification p. 1 of 2

Modify the catalog description of the Manufacturing Processes emphasis area as follows:

p. 193-194 of 2011-2013 Undergraduate Catalog:
Delete words with strikethrough marking. Add words in bold.

Students desiring to obtain a Bachelor of Science in Mechanical Engineering with an Emphasis Area in Manufacturing Processes must satisfy all requirements of the Bachelor of Science in Mechanical Engineering with the following modifications, with the additional stipulation that four courses must be taken as follows:

- a. Mc Eng 253 is required.
- One of the Mc Eng technical electives must be One course from the following Manufacturing/Automation courses: Mc Eng 353, 355, 349, and 306.
- c. One of the Mc Eng technical electives must be One course from the following Design courses: Mc Eng 363, 308, 356, and 302.
- d. Two courses 1) Mc Eng 357 or Mc Eng 308, and 2) Mc Eng 358 are required in lieu of Mc Eng 261. One course from the following list: McEng 308, 358
- e. The Math/Stat elective must be either Stat 213 or 215.

Modify the suggested sequence for the senior year as follows:

SENIOR YEAR
First Semester Credit
Mc Eng 242-Mech Eng Systems
Mc Eng 279-Auto Control of Dynamic Systems3
Mc Eng 208-Machine Design I3
Mc Eng 357 or Mc Eng 308
Mc-Eng-Technical Elective [†]
Manufacturing Technical Elective ^f 3
Manufacturing Technical Elective ^f
Elective Literature
17
Second Semester
Eng Mg 124-Principles of Engineering Management1
Eng Mg 137-Economic Analysis of Engr Projects2
Mc Eng 358 Integrated Product Dev
Mc Eng 261 – Engineering Design3
Mc Eng 280-Control System Lab1
Mc Eng Technical Elective
Manufacturing Technical Elective
Electives-Hum or Soc Sci
13

From: 573 341 4362 Page: 12/25 Date: 4/12/2013 2:21:18 PM

Manufacturing Emphasis Area Modification p. 2 of 2

Replace footnote f with the following:

Old footnote f:

One of the technical electives must be from the following Manufacturing/Automation courses: Mc Eng 353, Mc Eng 355, Mc Eng 349, Mc Eng 306. One of the technical electives must be from the following Design courses: Mc Eng 363, Cm Eng 308, Mc Eng 356, Mc Eng 302.

New footnote f:

The 9 hours of Manufacturing technical electives must be selected as follows:

One course from the following Manufacturing/Automation courses: Mc Eng 353, 355, 349, and 306.

One course from the following Design courses: Mc Eng 363, 356, and 302.

One course from the following list: McEng 308, 358

CC File # 8307-2012 - ExpEng-Effective Year: 2013 Fati 🖾 Term: Summer 🔲 Spring 🔲 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course 🛛 Course Deletion Credit Hours Prerequisites 🗌 Course Title Catalog Description Course Number Co-listing 🗵 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mining and Nuclear Engineering 2. Discipline and Course Number: Proposed: Exp Eng 411 3. Course Title: Present: Proposed: Research Methods Abbreviated Course Title: (24 Spaces or Less, Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) Present: Mining 411 **Proposed:** Foundations, dimensions, and methods for designing and investigating research problems. Focus on fundamental and applied research, research methods, literature review, experimental design and experimentation, discritation composition, concepts of originality and dissertation interlectual property. 5. If course requires field trip check box: 6. Credit Hours: Present: Total: Lecture: Lab: Total: 3 Proposed: Lecture: 3 Lab: 0 7. Prerequisites: Present: Proposed: Graduate Standing 8. Required for Majors: Elective for Majors: \boxtimes 9. Justification: We would like to co-list with Mining 411 research methods. It has become apparent that the masters of explosives engineering by research students need to take the class and we will be also including this for our PhD in explosives engineering in application as a required class. Dr. Baird (mining and explosives) has currently reworked min 411 and will teach onsite and distance. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) Mining 411 54 3) 4) 5) Recommended by Department (Chair signature) Recommended by Discipline Specific Curricula Committee (Chair signature Approved by Curricula Committee: (Chair signature) Approved by Faculty Senate: _ Date: (Chair signature)

From: 573 341 4362

Page: 13/25

Date: 4/12/2013 2:21:18 PM

From: 573 341 4362 Page: 14/25 Date: 4/12/2013 2:21:18 PM

Effective Year: FS2013 こうしょう こうしょう Effective Term: Summer □ Fall ☑ Spring

cc File #8370-2013-GE202-31

Course Change Form (CC)

This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prerequisites 🛛 Credit Hours New Course 🗌 Course Deletion Course Number Co-listing 🔲 Course Title 🔲 Catalog Description 🗵 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Electrical & Computer Engineering 2. Discipline and Course Number: Present: Cp Eng 202 Proposed: 3. Course Title: Present: Cooperative Engineering Training Proposed: Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) On-the-job experience gained through cooperative education with industry, with credit Present: arranged through departmental cooperative advisor. Grade received depends on quality of reports submitted and work supervisors evaluation. Proposed: On-the-job experience gained through cooperative education with industry, with credit arranged through departmental cooperative advisor. Grade received depends on quality of reports submitted and work supervisor's evaluation. Not more than one hour of credit may be applied to the B.S. degree. Pass-fail grading option only. 5. If course requires field trip check box: \Box Total: 0-6 Lecture: 0-6 Lab: 6. Credit Hours: Present: Total: 1 Lecture: 1 Lab: O Proposed: 7. Prerequisites: Present: none listed **Proposed:** Consent of the ECE Department required. 8. Required for Majors: Elective for Majors: 9. Justification: Note Credit is IND. Modification to Undergraduate Cp Eng Requirements per ECE Faculty 1/24/2013. Revision of departmental requirements for coop credit. Accompanying DC form. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 1) 6) 4) Recommended by Department (Chair signature) Recommended by Discipline Specific Curricula Committee. Approved by Curricula Committee: (Chair sign**atu**re) Date: Approved by Faculty Senate: _ (Chair signature)

From: 573 341 4362 Page: 15/25 Date: 4/12/2013 2:21:19 PM

					475 0		
Effective Ye Effective Terr			Spring 🗆	CC File	·#8371-2013-	EL202-31	
			e Change creating or mod				
<u>Course Cha</u>	anges (C	Check all changes.)					
New Course [□ с	ourse Deletion 🗌	Cred	lit Hours 🛚	Prerequis	sites 🛚	
Course Title [atalog Description		se Number 🗌	_	- '	
<u>Course Info</u>	<u>ormatio</u>	n (1-9 Must Be Co	mpleted. Leave "I	Proposed" items t	blank if no chang	je is being made.)	
1. Departme	ent: Elect	rical & Computer	Engineering				
2. Discipline	and Cou	ırse Number: l	Present : EE 202	Pro	oposed:		
3. Course Titl		ent: Cooperative osed:	Engineering Tr	aining			
Abbreviat	(24.5	se Title: Spaces or Less. Or (40 Words or Less)	nly needed for N	ew Courses or ⁻	Title Changes.))	
4. Catalog pe Present:	-	ob experience gai	inned through coc	sporative educa	tion with indus	try with credit	
riesent.	arranged	op experience gar through departn submitted and wo	nental cooperativ	ve advisor. Grad	de received de	pends on quality of	
Proposed:	Proposed: On-the-job experience gained through cooperative education with industry, with credit arranged through departmental cooperative advisor. Grade received depends on quality of reports submitted and work supervisor's evaluation. Not more than one hour of credit may be applied to the B.S. degree. Pass-fail grading option only.						
5. If course re	equires fi	eld trip check box	· .				
6. Credit Hou	rs:	Present:	Lecture: 0-		Total: 0-6	;	
7. Prerequisit Present:		Proposed: listed	Lecture: 1	Lab: O	Total: 1		
Propose	d: Conse	ent of the ECE Dep	partment require	ed.			
8. Required fo	or Majors:	: Elective 1	or Majors: 🛚				
9. Justificatio	Mod	e Credit is IND. ification to Underge epartmental requi	graduate EE Req rements for coo	uirements per I p credit. Accom	ECE Faculty 1/opanying DC fo	24/2013. Revision rm.	
	-	isly offered as an urses, initialed by				ow.	
1)		2)		3)			
4)		5)		6)			
Recommende	ed by Depa	artment	(Chair signatur	(e)	<u> </u>	Date: (\(\bar{\chi}\)	
Recommende	ed by Disc	ipline Specific Cur	ricula Committe		ef-	Date: <u>c49//3</u>	
Approved by	Curricula	Committee:	(Chair signatur	re)		Date: 4/12/2613	
Approved by	Faculty S	enate:	(Chair signatu	re)		Date:	

From: 573 341 4362 Page: 16/25 Date: 4/12/2013 2:21:19 PM

Effective Year Effective Term:		iall 🛭 Spring	.	CC File #83	72-2013- FE21	os-32
			ange Fo			
Course Chan	ges (Check all ch		a or modifying t	sermanene co	41.765.	
New Course □	Course Del		Credit Hour	sП	Prerequisites 🛛	
Course Title		scription 🗌	Course Nun	· · <u>—</u>	Co-listing 🗌	
· ·	_	•			if no change is bein	g made.)
	t: Electrical & Co				-	•
*	nd Course Num			Propose	ed:	
3. Course Title:				•		
J. Course True.	Proposed:					
,	d Course Title:		ded for New Cou	urses or Title (Changes.)	
Present:	lagnetics and ma	gnetically coup	led circuits, rota Inchronous mac	iting magnetic hines, and br	c fields, stepper m ushless DC machi	notors, DC nes.
Proposed:						
5. If course req 6. Credit Hours	uires field trip ch : Prese		ecture: 3		Total: 3	
7 Decembration	Propo	sed: Le	ecture:	Lab:	Total:	
7. Prerequisites Present:	Physics 24 with passing grade o	on the El Eng A	dvancement Exa	ım II. El Eng :	grade of "C" or be 208 is a corequisi	te.
Proposed:	Physics 24 with passing grade o	a grade of "C" on the El Eng A	or better; El En Ivancement Exa	g 153 with a ım II.	grade of "C" or be	etter;
8. Required for	Majors: 🗌 🛚 E	lective for Majo	ors: 🖾 🕆			
9. Justification:	The laboratory	y is no longer a	corequisite for	the lecture.		
	previously offere					
11. List ali co-li	sted courses, init	ialed by Dept.	Chair, if signatu	re does not ap	opear below.	
1)		2)		3)		
4)		5)	c n	6)		ulzel(3
Recommended	by Department _		alr signature)		Date: _	((661/2
Recommended	by Discipline Spe	cific Curricula (0	ps Rep	չ Date: _	02/19/13
Approved by Co	irricula Committe		air Gignature)	1.07.00	Date: _	411212013
Approved by Fa	culty Senate:	(Ch	air signature)		Date: _	·

From: 573 341 4362 Page: 17/25 Date: 4/12/2013 2:21:19 PM

Effective Yea] Fall 🛭 Spr	ing 🗌	CC File #\/	173-2013-EE	:2 0 1)-32
		is form is for crea	hange Formodifying	•	-	
Course Cha	nges (Check	: all changes.)				
New Course [] Cours	e Deletion 🔲	Credit Hou	rs 🔲	Prerequisite	s 🛚
Course Title		og Description 🗌	Course Nu	mber 🗌	Co-listing]
Course Info	ormation (1	-9 Must Be Complet	ted. Leave "Propose	ed" items blank	if no change i	s being made.)
1. Departme	nt: Electrical	& Computer Engi	neering			
2. Discipline	and Course	Number: Prese	ent : El Eng 207	Propos	ed:	
3. Course Title	e: Present:	Power System D	esign and Analysi	s		
	Proposed					
Abbreviate 4. Catalog Des	ed Course Ti 24 Space cription <i>(40 V</i>	es or L <mark>ess. Only n</mark>	eeded for New Co	urses or Title	Changes.)	
Present:	Power system	n components and	d transmission line cluding economic a gn project using a	and reliability	consideratio	ns, and fault
Proposed:						
5. If course re 6. Credit Hour	·s: I	rip check box: Present: Proposed:	Lecture: 3.	Lab: O	Total: 3 Total:	
7. Prerequisite Present:	es: El Eng 153	*	'C" or better and p	passing grade	on the El En	g Advancement
Proposed	l: El Eng 153 Exam II.	3 with a grade of '	'C" or better; pass	sing grade on	the El Eng A	dvancement
8. Required fo	r Majors: 🗌	Elective for M	ajors: 🛛			
9. Justification	n: The labo	ratory is no longe	r a corequisite for	the lecture.		
11. List all co-		s, initialed by Dep	rimental course (t. Chair, if signatu	ire does not a		
1)		2)		3)		
4)		5)	C A	6)		1/20/2
Recommended	i by Departm	ent <u>Resk</u>	(Chair signature)	-0	D	ate: 1/29/13 ate: 02/19/13
Recommended	d by Discipline	e Specific Curricul	a Committee <u>)</u> (Chair signature)	~ qxap	<u> </u>	ate: <u>64 9 3</u> 4/10/202
Approved by (Curricula Com	mittee:	(Chair signature)		D	ate: ///প্ৰত
Approved by F	Faculty Senate	e:	(Chair signature)		D	ate:

Page: 18/25

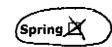
Date: 4/12/2013 2:21:20 PM

CC File #8374-2013-EE208-32 Effective Year: FS2013 みのパイ Fall 🖾 Spring X Effective Term: Summer Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours Prerequisites 🛛 New Course Course Deletion Course Number Co-listing 🔲 Course Title 🔲 Catalog Description Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Electrical & Computer Engineering Proposed: 2. Discipline and Course Number: Present: El Eng 208 3. Course Title: Present: Electromechanics Laboratory Proposed: **Abbreviated Course Title:** (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Experiments with power measurement, transformers, magnetically coupled circuits, rotating Present: magnetic fields, stepper motors, DC machines, induction machines, synchronous machines, and brushless DC machines. Proposed: Experiments with power measurement, transformers, magnetically coupled circuits, rotating magnetic fields, stepper motors, DC machines, induction machines, synchronous machines, and brushless DC machines. Credit will only given for one of El Eng 208 or 209. - Sp 14 5. If course requires field trip check box: \square Total: 1 Lecture: O Lab: 1 Present: 6. Credit Hours: Lecture: Lab: Total: Proposed: 7. Prerequisites: El Eng 153 with a grade of "C" or better, passing grade on the El Eng Advancement Present: Exam II. El Eng 205 is a corequisite. El Eng 153 with a grade of "C" or better; passing grade on the El Eng Advancement Exam II. Preceded or accompanied by El Eng 205. Elective for Majors: 🛛 8. Required for Majors: 🔲 Modification to Undergraduate EE Requirements per ECE Faculty 1/24/2013. Several 9. Justification: experiments in El Eng 208 and El Eng 209 are similar. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 1) 2) 6) 4) Date: 1(29/13 Recommended by Department (Chair signature) Recommended by Discipline Specific Curricula Committee. Approved by Curricula Committee: (ature) Date: Approved by Faculty Senate: _ (Chair signature)

Page: 19/25

Date: 4/12/2013 2:21:20 PM

Effective Year	: FS201 3	201	13/	
Effective Term:	Summer		Fall	2



cc File #8375-2013-EE209-32

Course Change Form (CC)

	Τ̈́t	nis form is for c	reating or mo	odifying (permanent	courses.		
<u>Course Cha</u>	nges (Check	k all changes.)	•					
New Course [Cours	se Deletion 🗌	Cre	edit Hou	rs 🗌	Prerequis	;ites 🛚	
Course Title [Catal	og Description	⊠ Co	urse Nur	nber 🗌	Co-listing	; 🗆	
Course Info	ormation (1	1-9 Must Be Com	pleted. Leave	"Propose	d" items bla	nk if no chang	je is being	made.)
1. Departme	ent: Electrical	l & Computer E	ngineering					
2. Discipline	and Course	Number: Pr	esent : El En	g 209	Prop	osed:		
3. Course Title	e: Present: Proposec	Power Syster I:	m Design and	Analysi	s Laborato	ry		
Abbreviat	ed Course T	itle:				L 0L		
4. Catalog De:	(24 Spac scription <i>(40</i>)	es or Less. Only Words or Less)	y needed for c	New Col	irses or lit	le Changes.;	1	
Present:	-	ded analysis of	1	ation, po	wer flow. o	compensation	n, and eco	nomic
		lividual projects				,,,,,,	.,	,,,,
			a					
				ation no	war flow a	omponestion	n and aco	nomic
Proposed:	analysis. Ind	ded analysis of lividual projects	voitge regui are required	1. Credit	will only, gi	ven for one	of El Eng	208 or 209.
	#((#// = - = - + · · · ·		'		be			
			_		J O			
	•	rip check box:		_		Total: 1		
6. Credit Hour		Present:	Lecture: Lecture:		Lab: 1 Lab:	Total:		
7. Prerequisit		Proposed:	rectni e:		Lav.	i otai.		
Present:		3 with a grade o El Eng 207 is a		er, pass	ing grade o	on the El Eng	Advancer	ment
Proposed	i: El Eng 15: Exam II. l	3 with a grade of acc	of "C" or bett companied by	er; pass El Eng :	ing grade o 207.	on the El Eng	Advance:	ment
8. Required fo	or Majors: 🗌	Elective fo	r Majors: 🛚					
9. Justification	n: Modificai experim	tion to Undergr ents in El Eng 2	aduate EE Re 208 and El En	equireme ng 209 ar	nts per EC e similar.	E Faculty 1/2	24/2013.	Several
10 Comostor	e proviously :	offered as an ex	vnarimental <i>i</i>	course (1	101. 201. 3	01. 401):		
		s, initialed by C					ow.	
1)	Hateu course	2)			3)			
				•	-			
4)		5) 2 7) /	100	· n	6)			15 a lea
Recommende	d by Departm	ment	(Chair signal	ture)	\cap		Date:	<u>/rsi(3</u>
Recommende	d by Disciplin	e Specific Curri	cula Commiti Chair signal	tee <u>21</u> 190°e) _n	N Ray	Dec	Date:	<u>2/19/19</u>
Approved by (Curricula Com	nmittee:	Chair signal	ture)			Date: <u></u>	<u> 12/2013</u>
Approved by F	Faculty Senat	e:					Date:	
TAPICARM BY			(Chair signat	ture)				

From: 573 341 4362 Page: 20/25 Date: 4/12/2013 2:21:20 PM

CC File #8376-2017-EE215-32 Effective Year: FS2013 Fall 🔯 Spring 🔲 Effective Term: Summer ... Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours 🗌 Prerequisites 🗵 New Course 🗌 Course Deletion 🔲 Catalog Description Course Number Co-listing Course Title Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Electrical & Computer Engineering Proposed: 2. Discipline and Course Number: Present: EE 215 Present: Discrete Linear Systems 3. Course Title: Proposed: Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Analysis methods for discrete-time signals and systems in the time and frequency domains Present: including signal models, and Fourier transforms. Continuous-time topics are included as introductory material. Proposed: 5. If course requires field trip check box: \Box Lab: O Total: 3 Lecture: 3 Present: 6. Credit Hours: Total: Lecture: Lab: Proposed: 7. Prerequisites: Elec Eng 153 with a grade of "C" or better; passing the Elec Eng Advancement Exam Present: II. Students should enroll in Elec Eng 215 and corequisite of Elec Eng 216. Elec Eng 153 with a grade of "C" or better; passing the Elec Eng Advancement Exam II. 8. Required for Majors: 🗵 Elective for Majors: Modification to Undergraduate EE Requirements per ECE Faculty 1/24/2013. 9. Justification: 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 2) 1) 6) 4) Recommended by Department (Chair signature) Recommended by Discipline Specific Curricula Committee -Approved by Curricula Committee: Date: Approved by Faculty Senate: (Chair signature)

From: 573 341 4362 Page: 21/25

Date: 4/12/2013 2:21:21 PM CC File #377-2013-EE216-32

Effective Year: Effective Term:		ring 🗌	CC File #03	7')-2013-EE216-52	
		Change Fo			
	This form is for cre	ating or modifying	permanent co	urses.	
	<u>es</u> (Check all changes.)		_	-	
New Course 🗌	Course Deletion 🗌	Credit Hou		Prerequisites 🗵	
Course Title 🗌	Catalog Description \Box			Co-listing 🔲	
Course Inforn	nation (1-9 Must Be Comple	eted. Leave "Propose	ed" items blank	if no change is being made.)	
1. Department	: Electrical & Computer Eng	ineering			
2. Discipline an	d Course Number: Pres	ent : EE 216	Propose	ed:	
3. Course Title:	Present: Discrete Linear Proposed:	Systems Laborato	ry		
Abbreviated	Course Title:				
*****	(24 Spaces or Less. Only ption (40 Words or Less)	needed for New Co	urses or Title (Changes.)	
Present: So	ftware tools for signal and stems analysis.	system representa	tion and for tir	ne and frequency-domain	
Proposed:					
5. If course requ 6. Credit Hours:	ires field trip check box: Present:	Lecture: O		Total: 1	
7. Prerequisites:	Proposed:	Lecture:	Lab:	Total:	
Present:	Elec Eng 153 with a grade II. Preceded or accompanie	of "C" or better; pa ed by El Eng 215 ar	assing the Elec	Eng Advancement Exam of Elec Eng 216.	
Proposed:	Elec Eng 153 with a grade II. Preceded or accompanie	of "C" or better; pa			
8. Required for M 9. Justification:	laĵors: 🛛 Elective for Modification to Undergrad		ents per ECE F	aculty 1/24/2013.	
	reviously offered as an exp ed courses, initialed by De 2)				
4)	5)		6)		
_	OI	0 2 0		1/2/1	2
Recommended by	y Department	(Chair signature)		Date: <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	<u> </u>
Recommended by	y Discipline Specific Curricu	la Committee <u>\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	mapon	Date: <u>\\pi^2/l\fi//.</u>	<u>3</u>
Approved by Cur	ricula Committee:	(Chair signature)		Date: 4/12/201	3
Approved by Fact	ulty Senate:	(Chair signature)		Date:	

From: 573 341 4362 Page: 22/25

Fall

Effective Year: P\$20.53
Effective Term: Summer

Date: 4/12/2013 2:21:21 PM

CC File #8378-2013-EE 218-32

Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours 🔲 Prerequisites 🛛 New Course 🗍 Course Deletion 🔲 Course Number 🔲 Co-listing 🔲 Catalog Description Course Title 🔲 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Electrical & Computer Engineering 2. Discipline and Course Number: Present: EE 218 Proposed: Present: Continuous Linear Systems Laboratory Proposed: Abbreviated Course Title: (24 Spaces or Less, Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Laboratory and software tools for the analysis of linear and non-linear systems. Topics Present: include spectral analysis, transforms, and applications. . Proposed: 5. If course requires field trip check box: 🗌 Total: 1 Lab: 1 Lecture: O Present: 6. Credit Hours: Total: Lecture: Lab: Proposed: 7. Prerequisites: Elec Eng 215, Elec Eng 216, and Math 204 each with a grade of "C" or better. Present: Corequisite of Elec Eng 217. Proposed: Math 204 with a grade of "C" or better; Elec Eng 153 with a grade of "C" or better; passing the Elec Eng Advancement Exam II. Preceded or accompanied by El Eng 217. 8. Required for Majors: 🛛 Elective for Majors: 🔲 Modification to Undergraduate EE Requirements per ECE Faculty 1/24/2013. 9. Justification: 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 2) 1) 6) 4) Recommended by Department (Chair signature) Recommended by Discipline Specific Curricula Committee (Chair signatüre Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate: ___ (Chair signature)

Page: 23/25

Date: 4/12/2013 2:21:21 PM

	CC File # 8380	0 -a013-6e En	16-352-32
Effective Year: 2019 Effective Term: Summer 🔲 Fa			
	Change Form (CC)		
Course Title Catalog Description	Course Number	Prerequisites 🔀 Co-listing 🔲	
Course Information (Sections 1-9 must be completed. Leave	a "Proposed" items blank if no o	change is being made.)	
1. Department: Geological Sciences and Engineering			
2. Discipline and Course Number: Present: GE352	Proposed:		•
3. Course Title: Present: International Engineering an	d Design		
Proposed:			
Abbreviated Course Title (24 Spaces or Less. Only nee	ded for New Courses or Title Ci	nanges.):	
 Catalog Description (350 character spaces or less.) Present: Proposed: 			
5. If course requires field trip check box: 🖂			
6. Credit Hours: Present: Lecture 3 Lab C	rotal 3		
Proposed: Lecture Lab	Total		
7. Prerequisites: Present: Senior standing, Instructor approval			
Proposed: Senior standing, Instructor approval, G	E311, GE347		
8. Required for Majors: Elective for Majors:			
9. Justification: GE311/GE347 are the lab/lecture called "		ingineering & Design".	
10. Semesters previously offered as an experimental co			
	signatur e do es not appear b 5)	elow.	4 ~
2) MetE952 PS 4)	6)		4-5-13
Recommended by Department (Chair signature)	/ Offor	<u></u>	Date: - km 30/13
Recommended by DSCC (Chair signature)	-0.1	<u> </u>	Date: 62/15/13
Approved by Curricula Committee: (Chair signature)	Jains.		Date: 4/17/2013
Approved by Faculty Senate: (Chair signature)			Date:

Date: 4/12/2013 2:21:22 PM From: 573 341 4362 Page: 24/25 CC File # 8381-2013-Min Eng-Effective Year: 2013 Fall 🖾 Term: Summer 🔲 Spring 🔲 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course Course Deletion Credit Hours Prerequisites 🔲 Course Title 🗌 Catalog Description 🗵 Course Number 🛄 Co-listing 🖾 **Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mining and Nuclear Engineering 2. Discipline and Course Number: Present: Min Eng 411 Proposed: 3. Course Title: Present: Research Methods Proposed: **Abbreviated Course Title:** (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) Present: Foundations, dimensions, and methods for designing and investigating research problems in Mining Eng. Focus on fundamentals and applied research, research methods, literature review, experimental design and experimentation, disertation composition, concepts of originality and interlectual property **Proposed:** Foundations, dimensions, and methods for designing and investigating research problems. Focus on fundamentals and applied research, research methods, literature review, experimental design and experimentation, discritation composition, concepts of originality and interlectual property. dissertation 5. If course requires field trip check box: Total: .3 6. Credit Hours: Lecture: Present: Lab: Total: Proposed: Lecture: Lab: 7. Prerequisites: Present: Graduate Standing. Proposed: 8. Required for Majors: 🔲 Elective for Majors: 🔲 We would like to co-list with Exp Eng 411 research methods (new). Above catalog 9. Justification: description changed to remove redundency and match Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) ExpEng 411 2) 3) 4) 5) Recommended by Department (Chair signature) Recommended by Discipline Specific Curricula Committee (Chair signature) Approved by Curricula Committee: _

(Revised 1/29/09)

Date:

(Chair signature)

(Chair signature)

Approved by Faculty Senate: _

Date: 4/12/2013 2:21:22 PM From: 573 341 4362 Page: 25/25 CC File # 8382 -2013 - Arch Eng. 204-32 Effective Year: 2013 Term: Summer 🗌 Fall 🖾 Spring 🗌 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course 🗌 Course Deletion Credit Hours Prerequisites 🗵 Course Title 🗌 **Catalog Description** Course Number 🔲 Co-listing 🔲 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Civil, Architectural and Envir 2. Discipline and Course Number: Proposed: 3. Course Title: Present: Architectural Design II Proposed: Abbreviated Course Title: ArchE 204 (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) nodul5 Present: A continuation of Architectural Design I with an increased focus on problems and associated with detail development, principles of acoustic design and building construction as a form determinant. Proposed: 5. If course requires field trip check box: 6. Credit Hours: Lecture: Present: Lecture: Lab: Total: Proposed: 7. Prerequisites: Present: ArchE 203 Proposed: Art 203 8. Required for Majors: 🛛 Elective for Majors: 🔲 9. Justification: Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 2) 4) 5) Recommended by Department (Chair signature) Recommended by Discipline Specific Curricula Committee (Chair sighature)

Date:

(Chair signature)

(Chair signature)

Approved by Curricula Committee: __

Approved by Faculty Senate: __

Date: 4/12/2013 2:30:31 PM From: 573 341 4362 Page: 1/25 CC File # 8383-30/3- ArchEng -Effective Year: 2013 Spring 🗀 Term: Summer 🗌 Fall 🔯 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours Prerequisites 🛄 New Course 🗌 Course Deletion 🛛 Co-listing 🔲 Course Number 🔲 Course Title 📋 Catalog Description 🗌 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) Arch Eng Proposed: 1. Department: Civil, Architectural and Envir 2. Discipline and Course Number: Present: 203 Present: Architectural Design I 3. Course Title: Proposed: Abbreviated Course Title: ArchE 203 (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) Introduction to the interaction between architecture and the engineering disciplines. Theories Present: of building and site design, technology as an integral component of design, plan and spatial organization, structural clarity, formal composition, and environmental context are considered as principle... Proposed: 5. If course requires field trip check box: \square Total: Lab: Present: Lecture: 6. Credit Hours: Lab: Total: Lecture: Proposed: 7. Prerequisites: Present: Sophmore Standing Proposed: All mentions of "ArchE203" in the undergraduate catalog need to be seplected with "Art 203". 8. Required for Majors: 🖾 9. Justification: 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1)	2)	3)	
4)	5)	16) / July	-1.1
Recommende	d by Department _	(Chair signature)	Date: 2513
Recommende	d by Discipline Spec	ific Curricula Committee (Chair signature)	Date: 3-/1-13
Approved by	Curricula Committee		Date: 4/12/2013
Approved by	Faculty Senate:	(Cital signature)	Date:

(Chair signature)

Page: 2/25

Date: 4/12/2013 2:30:31 PM

cc File #3387-2013-EE217-32

Effective Yea		∏ Fall⊠ Sp	<i>2014</i> ring	CC File # $\hat{\delta}$	397-2013-EE217-32
		his form is for crea	Change Fating or modifying		
Course Cha	inges (Chec	ck all changes.)			_
New Course [Cour	se Deletion 🗌	Credit Ho		Prerequisites 🗵
Course Title [•	log Description 🗌		• •	Co-listing [
Course Info	<u>ormation</u> (1-9 Must Be Comple	eted. Leave "Propo	sed" items blank	k if no change is being made.)
1. Departme	e nt: Electrica	al & Computer Eng	ineering		
2. Discipline	and Course	e Number: Pres	ent : EE 217	Propos	ed:
3. Course Titl	e: Present	: Continuous Line	ear Systems		
	Propose				
	e d Course 1 (24 Spa (20 scription	Fitle: ces or Less. Only (<i>Words or Less)</i>	needed for New C	Courses or Title	Changes.)
Present:	Analysis me	thods for continuo	er transforms, an	and systems in Id Laplace tran	the time and frequency domains sforms. Examples of control and
Proposed:			-		
5. If course re	equires field	trip check box: 🗌			
6. Credit Hou	rs:	Present:	Lecture: 3	Lab: O	Total: 3
7 8		Proposed:	Lecture:	Lab:	Total:
7. Prerequisit Present:	Elec Eng	215, Elec Eng 216 nroll in Elec Eng 21			de of "C" or better. Students 18.
Proposed		with a grade of " he Elec Eng Advar			a grade of "C" or better;
8. Required fo	or Majors: 🗵	Elective for N	1ajors: 🔲		
9. Justificatio	n: Modifica	ation to Undergrad	uate EE Requiren	nents per ECE	Faculty 1/24/2013.
		offered as an exp			· •
	·listed cours	es, initialed by Dep	ot. Chair, if signal		ppear below.
1)		2)		3)	
4)		5)		6)	. 1 1.
Recommended	d by Departn	nent	(Chair signature)		Date: <u>し(なや/(3</u>
Recommended	d by Disciplir	ne Specific Curricul	la Committee (Chair signature)	A P	Date: <u>\(\frac{2}{19} / 13 \)</u>
Approved by (Curricula Con	nmittee:	(Chair signature)	taril fairt	Date: 4/12/2013
Approved by F	faculty Senat	te:	(Chair signature)		Date:

Page: 3/25 Date: 4/12/2013 2:30:31 PM

<i>೩೦/Y</i> Effective Year: ૨೦૧૩ Effecti	ive Term: Summer 🔲		7-2013-CER ENG-103-32	
		Change Form (CC	•	
Course Changes (Check all chan New Course — Co		Credit Hours 🗌	Preregulsites 🔀	
<u> </u>		Course Number	·	
Course Information (Sections 1-	- , —			
1. Department: Materials Sci	·	_	,	
2. Discipline and Course Numl	6N6	:. Proposed:		
3. Course Title: Present: Intro	oduction to Glass Scien	ce & Technology		
Proposed:				
Abbreviated Course Title ((24 Spaces or Less. Only ne	eeded for New Courses or Title (Changes.):	
	tomic-level structure of ming systems. Simple r		onships between composition, prope uced to explain temperature-depende	
5. If course requires field trip	check box:			
•	Lecture 3 Lab	O Total 3		
Proposed:	Lecture Lab	Total		
7. Prerequisites: ENG Present: Cer 102				
Proposed: Pass prerequis	ite course with "C" or t	petter grade in CERE	ENG 102	
8. Required for Majors: 🔀				
9. Justification: Encourage stud	dent success through a be	tter understanding of core mat	terial	
10. Semesters previously offer	red as an experimental ϵ	course (101, 201, 301, 401):		
11. List all co-listed courses, in 1)	nitialed by Dept. Chair, i 3)	f signature does not appear b 5)	pelow.	
2)	4)	/ 6)		
ecommended by Department	(Chair signature)	ulu		<u>//3</u>
ecommended by DSCC	(Chair signature)	apy .	Pate: 3 - (!-)	13
pproved by Curricula Committee	(Chair signature)	U Fit	Date: 4/12/3	2613
pproved by Faculty Senate:	(Chair signature)		Date:	

Page: 4/25

Date: 4/12/2013 2:30:32 PM

2019	/	CC File # 8388	3-2013-CER ENG-122-32
Effective Year: 2013 Effec	tive Term: Summer 🔲 🗆	Fall 📗 Spring 🔀	
		Change Form (CC ting or modifying permanen	•
Course Changes (Check all cha		_	<u></u>
	ourse Deletion 🗌	Credit Hours	Prerequisites 🔀
Course Title 🗌 C	atalog Description 🔲	Course Number 🗌	Co-listing [
Course Information (Sections	1-9 must be completed. Lea	ve "Proposed" items blank if no	change is being made.)
1. Department: Materials So	ience & Engineering:	.	
2. Discipline and Course Nun	nber: Present: Cer 122	Proposed:	
3. Course Title: Present: Ce	ramic Materials Laborato	ry II - Glass & Ceramic Proce	essing
Proposed:			
Abbreviated Course Title	(24 Spaces or Less. Only ne	eded for New Courses or Title C	hanges.):
4. Catalog Description (360 ci Present: Laboratory exp	-	sing, and characterization o	f glasses and ceramics. Glasses are
formulated, melted and	characterized to correlat	= :	es. Clay-based ceramics are formulated to
5. If course requires field trip	check box:		
6. Credit Hours: Present:	Lecture O Lab 2	ス Total ス	
Proposed	: Lecture Lab	Total	
7. Prerequisites: Present: Cer 111			
Proposed: Pass prerequi	isite course with "C" or b	etter grade in CER	ENG III
8. Required for Majors: 🔀	Elective for Majors		
9. Justification: Encourage stu	udent success through a bet	ter understanding of core mate	erīal
10. Semesters previously offe	ered as an experimental c	ourse (101, 201, 301, 401):	
11. List all co-listed courses, i 1)	initialed by Dept. Chair, If 3)	signature does not appear b 5)	elow.
2)	4)	6)	
Recommended by Department _	(Chair signature)	relien	Date: 2/20/13
Recommended by DSCC	(Chair signature)	reg	Date: 3 = 11 - 13
Approved by Curricula Committee	(7)	Juit	Date: 4/12/2013
Approved by Faculty Senate:	(Chair signature)		Date:

2014

From: 573 341 4362 Page: 5/25 Date: 4/12/2013 2:30:32 PM

cc File # 8389-2013-CER ENG-222-32

Effective Year: 2013 Effective T	erm: Summer 🔲 🗜	all Spring 🔀		
,		Change Form (CC) Ing or modifying permanent	<u>"</u>	
Course Changes (Check all changes.) New Course Course		Credit Hours	Prerequisites 🔀	
Course Title 🔲 Catalo	g Description 🗌	Course Number	Co-listing [
Course Information (Sections 1-9 mi	ust be completed. Leav	e "Proposed" items blank if no o	change is being made.)	
1. Department: Materials Science				
2. Discipline and Course Number:	Present: Cer 222	Proposed:		
3. Course Title: Present: Applied	Glass Forming			
Proposed:				
Abbreviated Course Title (24 S	paces or Less. Only nee	ded for New Courses or Title Ch	nanges.):	
4. Catalog Description (360 charact Present: Examines the prope shaping, molding and casting. instructor permission. Proposed:	rties and behavior of	= "	- -	-
5. If course requires field trip chec	ck box:			
•	cture / Lab /	/ Total 🞝		
Proposed: Le	•	Total		
7. Prerequisites:	/-			
Proposed: Pass prerequisite of	sourse with "C" or be	etter grade in cither	- CERENG-10	YON MET
8. Required for Majors: 🔀	Elective for Majors:			ENG 125
9. Justification: Encourage student	success through a bett	ter understanding of core mate	rial	
10. Semesters previously offered a	as an experimental co	ourse (101, 201, 301, 401):		
11. List all co-listed courses, initial 1)	led by Dept. Chair, if: 3)	signature does not appear be 5)	elow.	
2)	4)	, / 6)		
Recommended by Department(Chr	Wayur &	feelen		Date: 2/20/13
Recommended by DSCC	air signature)	-D.		Date: 3-11-13
Approved by Curricula Committee:	air signature)	Jaint		Date: 4/12/26/3
Approved by Faculty Senate:				Date:
(Cha	air signature)			

From: 573 341 4362 Page: 6/25 Date: 4/12/2013 2:30:32 PM CC File # 8390-2013-CER ENG-231-32 Effective Year: 2013 Effective Term: Summer Fall | Spring X Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours Prerequisites 🔀 New Course Course Deletion Co-listing Course Number Course Title Catalog Description <u>Course Information</u> (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Cer 231 Proposed: 3. Course Title: Present: Ceramic Processing Lab I Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: The first half of a two-semester sequence that gives students practical knowledge of the methods and techniques used in the fabrication of ceramics. Prerequisite: Cr Eng 122. Proposed: 5. If course requires field trip check box: Lab 🔊 Total 🔊 6. Credit Hours: Present: Lecture O Proposed: Lecture Lab Total 7. Prerequisites: ENG-Present: Cer 122 Proposed: Pass prerequisite course with "C" or better grade in CERENG 122 8. Required for Majors: 🔀 Elective for Majors: 🔲 9. Justification: Encourage student success through a better understanding of core material 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 5) 1) 2) Recommended by Department (Chair signature) Recommended by DSCC (Chair signature)

Approved by Curricula Committee:

Approved by Faculty Senate:

(Chair signature)

(Chair signature)

Date:

Recommended by Department

Approved by Curricula Committee:

Approved by Faculty Senate:_

(Chair signature)

(Chair signature)

Recommended by DSCC

Page: 7/25

Date: 4/12/2013 2:30:33 PM

CC File # 8391-2013-CER ENG-242-32 Effective Term: Summer Fall Spring Effective Year: 2013 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course Course Deletion Credit Hours Prerequisites 🔀 Course Title Catalog Description Course Number Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Cer 242 Proposed: 3. Course Title: Present: Ceramic Processing Lab II Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: The second half of a two-semester sequence that gives students practical knowledge of the methods and techniques used in the fabrication of ceramics. Preroquisito: Cr Eng 221. Proposed: 5. If course requires field trip check box: 6. Credit Hours: Present: Lecture Lab Total Proposed: Lecture Lab Total 7. Prerequisites: Present: Cer 231 Proposed: Pass prerequisite course with "C" or better grade in CER ENG 231 8. Required for Majors: Elective for Majors: 9. Justification: Encourage student success through a better understanding of core material 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 5) 2) 4) 6)

Date:

Page: 8/25

Date: 4/12/2013 2:30:33 PM

CC File # 8392-2013-CER ENG-251-32 Effective Term: Summer Fall Spring Effective Year: 2013 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course 🗍 Credit Hours Prerequisites 🔀 Course Deletion Course Number 🔲 Co-listing Course Title Catalog Description Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Cer 251 Proposed: 3. Course Title: Present: Phase Equilibria Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: The study of unary, binary and ternary inorganic, phase equilibrium systems with examples for solving practical engineering problems. Prerequisite: Chem 3. Proposed: 5. If course requires field trip check box: Present: Lecture 6. Credit Hours: Lab Proposed: Lecture Lab Total 7. Prerequisites: Present: Chem 3 Proposed: Pass prerequisite course with "C" or better Grade in CITCM 3 8. Required for Majors: Elective for Majors: 9. Justification: Encourage student success through a better understanding of core material 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 5) 1)

Recommended by DSCC _________ Date: 3 -//-

Approved by Curricula Committee: Date: 4/12/2013

Approved by Faculty Senate: ______ Date: _______

From: 573 341 4362 Page: 9/25 Date: 4/12/2013 2:30:33 PM

8393-2013-CER ENG-369-32 Effective Year: 2013 - Effective Term: Summer Fall Spring X Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours New Course Course Deletion Prerequisites 🖂 Course Title Catalog Description Course Number Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Cer 369 Proposed: 3. Course Title: Present: Glass Science & Engineering Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: The development, manufacturing methods, applications, and properties of flat, fiber, container, chemical, and special purpose glasses. Composition/property relationships for glasses and nucleation-crystallization processes for glass-ceramics are also covered. Prerequisite: Cr Eng 103. Proposed: 5. If course requires field trip check box: 6. Credit Hours: Present: Total 3 Lecture Lab Proposed: Lecture Lab Total 7. Prerequisites: Present: Cer 103 Proposed: Pass prefequisite course with "C" or better grade in CER ENG-103 8. Required for Majors: 🔯 Elective for Majors: 9. Justification: Encourage student success through a better understanding of core material 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 5) 2) 4) 6) Recommended by Department (Chair signature) Recommended by DSCC (Chair signature) Approved by Curricula Committee: (Chair signature) Approved by Faculty Senate:_ Date:

(Chair signature)

From: 573 341 4362 Page: 10/25 Date: 4/12/2013 2:30:34 PM

2014

CC File # 8394-2013-CER ENG-284-32

Effective Year: 2013 Effective Term: Summer Fall [| Spring |]

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (C	_			Consideration	. 🗆	n 57	•
New Course [ourse Deletic		Credit Ho		Prerequisites 🔀	
Course Title [_} Ca	talog Descri	iption 🔛	Course Nu	ımber 🔲	Co-listing 🔲	
Course Information	n (Sections 1	-9 must be co	ompleted. Leav	ve "Proposed	i" items blank i	f no change is being ma	de.)
1. Department: N	laterials Sci	ence & Engi	ineering	<u>, </u>			
2. Discipline and C	Course Num	ber: Present	t: Cer 284	Propo	sed:		
3. Course Title: Pr	resent: Elec	trical Prope	rties of Cera	mics			
Pr	roposed:						
Abbreviated C	ourse Title ((24 Spaces or	Less. Only ne	eded for New	/ Courses or Tit	tle Changes.):	
	application optical pro	of ceramic coperties. Em	chemistry an phasis is plac	ced on the i	relationships	between properties	of electronic, dielectric and crystal structure,
5. If course require	es field trip	check box: [\supset				
6. Credit Hours:	Present:	Lecture	3 Lab	/ Total	4		
	Proposed:	Lecture	Lab	Total	•		
7. Prerequisites: Present: Phys i	ics 107						
Proposed: Pas	is-prerequi s	ite course v	vith "C" or b	etter 🦙	PHYSIC.	5 107	
8. Required for Ma			e for Majors				
9. Justification: En	courage stu	dent success	through a bet	ter understa	nding of core :	material	
10. Semesters pres	viously offe	red as an ex	perimental c	ourse (101,	201, 301, 40 1	1):	
11. List all co-listed	d courses, ir	itialed by D	ept. Chair, if	signature d	oes not appe	ar below.	
1)		3)		5)	• • •		
2)		4)		/ 6)			
Recommended by De	partment	Wc	refue th	ubu	· · · · · · · · · · · · · · · · · · ·		Date: 2/20/13
Recommended by DS	сс	(Chair signature	-84p	Ja Ro	·pen		Date: <u>3-/1-13</u>
Approved by Curricula	a Committee	(Chair signature :(Chair signature	Donib	Fit _	<u> </u>		Date: 4/12/2013
Approved by Faculty 5	šenate:		•	-			Date:
-hh- mann mà i manità -		(Chair signature	re)				Date-

Effective Year: 2013

Effective Term: Summer Fall Spring

Page: 11/25

Date: 4/12/2013 2:30:34 PM

CC File # 8395-2013-CER ENG-306-32

Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours Prerequisites 🖂 New Course Course Deletion Catalog Description Course Number Co-listing Course Title 🔲 Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Cer 306 Proposed: 3. Course Title: Present: Mechanical Properties of Ceramics Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: This course will treat the theory and testing practice related to design based on the mechanical properties of ceramics. The course also includes a laboratory consisting of experiments for the characterization of the mechanical properties of ceramics. Prerequisite: Civ Eng 110... Proposed: 5. If course requires field trip check box: Lecture 3 Total Present: Lab 6. Credit Hours: Proposed: Lecture Lab Total 7. Prerequisites: Present: Civ Eng 110 Proposed: Pass prerequisite course with "C" or better grade in CIV ENG 110 Elective for Majors: 8. Required for Majors: 🔀 9. Justification: Encourage student success through a better understanding of core material 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 5) 2) 6) Recommended by Department Recommended by DSCC (Chair signature) Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate: (Chair signature)

Page: 12/25

Date: 4/12/2013 2:30:34 PM

CC File # 8396-2013-CER ENG-396-32

Effective Year: 2013 Effective Term: Summer Fall Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course Course Deletion Credit Hours Prerequisites 🖂 Course Title Catalog Description Course Number Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Cer 369 Proposed: 3. Course Title: Present: Glass Science & Engineering Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: The development, manufacturing methods, applications, and properties of flat, fiber, container, chemical, and special purpose glasses. Composition/property relationships for glasses and nucleation-crystallization processes for glass-ceramics are also covered. Prerequisiter-Cr Eng 103. Proposed: 5. If course requires field trip check box: 6. Credit Hours: Present: Lecture 3 Total 3 Lab O Proposed: Lecture Lab Total 7. Prerequisites: ENG-Present: Cer 103 Proposed: Pass prerequisite course with "C" or better grade in CER ENG 103 8. Required for Majors: Elective for Majors: 9. Justification: Encourage student success through a better understanding of core material 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 5) 2) 4) 6) Recommended by Department (Chair signature) Recommended by DSCC (Chair signature) Approved by Curricula Committee: (Chair signature) Approved by Faculty Senate: Date: (Chair signature)

From: 573 341 4362 Page: 13/25

Date: 4/12/2013 2:30:35 PM

CC File # 8397-2013-CER ENG-371-32

Effective Term: Summer 🔲 Fall [] Spring 🗹 Effective Year: 2013 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours Prerequisites 🔀 Course Deletion New Course Course Number Co-listing Catalog Description Course Title Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: #er 371 3. Course Title: Present: Dielectric & Electrical Properties of Oxides Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: The processes occurring in inorganic materials under the influence of an electric field are considered from basic principles. Emphasis is placed on application to real systems. Prerequisite: Cr Eng 284. Proposed: 5. If course requires field trip check box: 6. Credit Hours: Present: Lecture Lab Lab Total Proposed: Lecture 7. Prerequisites: (MG-Present: Cer 284 Proposed: Pass prerequisite course with "C" or better grade in CER ENG 284 Elective for Majors: 8. Required for Majors: 🔯 9. Justification: Encourage student success through a better understanding of core material 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 5) 6) 2) Recommended by Department (Chair signature Recommended by DSCC (Chair signature Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate:_ (Chair signature)

Page: 14/25

Date: 4/12/2013 2:30:35 PM

New Course Course Deletion Credit Hours Prerequisites
This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course Course Course Deletion Course Credit Hours Prerequisites Course
New Course Course Deletion Credit Hours Prerequisites
New Course Course Deletion Credit Hours Prerequisites
Course Title Catalog Description Course Number Co-listing
Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.)
1. Department: Materials Science & Engineering
2. Discipline and Course Number: Present: Met 315 Proposed:
3. Course Title: Present: Metallurgical Process Design Principles
Proposed:
Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.):
4. Catalog Description (360 character spaces or less.) Present: Application of mass, component and energy balances for metallurgical design. The fundamentals of
engineering economic analysis will be examined and experimental design techniques will be introduced. Students will be prepared for the selection and planning of the subsequent design project. Prerequisite: Senior standing in Mt Eng Proposed:
5. If course requires field trip check box:
6. Credit Hours: Present: Lecture Lab Total
Proposed: Lecture Lab Total
7. Prerequisites: Present:
Proposed:
8. Required for Majors: Elective for Majors:
9. Justification: Course no longer offered - replaced by Met 261/262
10. Semesters previously offered as an experimental course (101, 201, 301, 401):
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.1)3)5)
2) 4) 1 6)
Recommended by Department White Aulu Date: 2/29/13
Recommended by DSCC Chair signature) 20 A D I
Approved by Curricula Committee: Date: 4/12/2013 (Chair signature)
Approved by Faculty Senate: Date:

From: 573 341 4362 Page: 15/25

Date: 4/12/2013 2:30:36 PM CC File # 8399-2013-MET ENG-316-20

Effective Year: 2013 Effect	tive Term: Summer 🔲 🛭 Fa	all 🔀 Spring 🗌		
		Change Form (CC)		
Course Changes (Check all cha	<u> </u>	. —	_	
<u> </u>	<u> </u>	— <u> </u>	Prerequisites	
Course Title 🗌 💮 C	atalog Description 🔲	Course Number [Co-listing	
Course Information (Sections 1			change is being made.)	
1. Department: Materials Sc	ience & Engineering: اکارین			
2. Discipline and Course Num		Proposed:		
3. Course Title: Present: Me	tallurgical Design Project			
Proposed:				
	·	ded for New Courses or Title Ch	anges.):	
skills, understanding and	ps will undertake selected I data from previous cours	projects, which will represe ses. The faculty supervised on ngineer. Prerequisite: Mt En	pen-ended design pi	_
5. If course requires field trip	check box:			
6. Credit Hours: Present:	Lecture 2 Lab 2	Total 2		
Proposed:	: Lecture Lab	Total		
7. Prerequisites: Present:				
Proposed:				
8. Required for Majors: 🔀 👚	Elective for Majors:			
9. Justification: Course no long	ger offered - replaced by Me	t 261/262		
10. Semesters previously offe	ered as an experimental co	urse (101, 201, 301, 401):		
11. List all co-listed courses, i 1)	nitialed by Dept. Chair, if s 3)	ignature does not appear be 5)	low.	
2)	4) //	, (6)		
Recommended by Department	(Chair signature)	kulu		Date: 2/20/13
tecommended by DSCC	(Chair signature)	catoper		Date: 3 -/(- / 3
approved by Curricula Committee	$\alpha \cup \alpha \cup$	Bind.		Date: 4/12/24/3
approved by Faculty Senate:	(Chair signature)	. 		Date:

Page: 16/25

Date: 4/12/2013 2:30:36 PM

CC File # 8400-2013-MET ENG-318-20

Effective Year: 2013 E	ffective Term: Sur	nmer 🔲 🛭 Fall	Spring			
		Course Ch	-	•		
Course Changes (Check a	ll changes.)					
New Course	Course Deletion	r⊠ Cr	edit Hours		Prerequisites 🗌	
Course Title 🗌	Catalog Descrip	tion 🔲 🛚 Co	ourse Numb	er 🗌	Co-listing 🔲	
Course Information (Secti	ions 1-9 must be con	npleted. Leave "f	Proposed" it	ems blank if no	change is being made.)
1. Department: Materia	als Science & Engin	eering				
2. Discipline and Course			Proposed	l:		
3. Course Title: Present:	: Principles for Mi	crostructural D	esign			
Propose	:d:					
Abbreviated Course	Title (24 Spaces or L	ess. Only needed	d for New Co	urses or Title C	hanges.):	
	se will introduce t p students learn al	he basics of mi bout the basic	principles a		that can be used to c ctural design approa	lesign advanced sches. P rerequisites: <u>A</u>
5. If course requires field	d trip check box:]				
6. Credit Hours: Prese	ent: Lecture	2- Lab	Total	2-		
Propo	osed: Lecture	Lab	Total			
7. Prerequisites: Present:						
Proposed:						
8. Required for Majors:	🔀 Elective	for Majors: 🗌]			
9. Justification: Course n	o longer offered					
10. Semesters previously	y offered as an exp	erimental cour	se (101, 20	1, 301, 401):		
11. List all co-listed cours		pt. Chair, if sigr		not appear b	elow.	
1)	3)		5)			
2)	4)	Marine	4/1 /1/11			7/22/12
Recommended by Departme	ent(Chair signature)	vinga 4	<u> xunner</u>			Date: 445
Recommended by DSCC	(Chair signature)	8+ X	aft			Date: 3 - // - /3
Approved by Curricula Comr	·	Daniel 9	disto		MARTIN TO THE STATE OF THE STAT	Date: 4/12/2013
Approved by Faculty Senate:						_ Date:
heigen by i penty sellete.	(Chair signature))				,

From: 573 341 4362 Page: 17/25

Effective Term: Summer 🔲 Fall 🔀 Spring 🔲

Effective Year: 2013

Date: 4/12/2013 2:30:36 PM

CC File # 8401-2013-MET ENG-332-20

Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours Prerequisites ____ Course Deletion 🔀 New Course Course Number Co-listing Catalog Description Course Title Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering Proposed: 2. Discipline and Course Number: Present: Met 332 3. Course Title: Present: Metals Treatment Laboratory Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: The students plan and perform experiments that illustrate heat treating processes and their effects on the properties and structure of commercial alloys. Prerequisite: Accompanied or preceded by Mt Eng. 331. Proposed: 5. If course requires field trip check box: Total Present: Lecture Lab 6. Credit Hours: Total Proposed: Lecture Lab 7. Prerequisites: Present: Proposed: Elective for Majors: 8. Required for Majors: 🔀 9. Justification: Course no longer offered 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 5) 1) 3) 4) 2) Recommended by Department (Chair signature) Recommended by DSCC (Chair signature) Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate:_ (Chair signature)

From: 573 341 4362 Page: 18/25

Date: 4/12/2013 2:30:37 PM

	•	CC File # 8	402-2013-MET ENG	-354-20
Effective Year: 2013 Effe	ective Term: Summer			
		e Change Form (ating or modifying perma	•	
Course Changes (Check all c				
	Course Deletion 🔀	- ·	Prerequisites	
-	Catalog Description	—	Co-listing 🔲	
Course Information (Section	•		if no change is being made.)
1. Department: Materials	Science & Engineering	16-		
2. Discipline and Course No		•		
3. Course Title: Present: E	lectrical Systems and Con	trois for Materials		
Proposed:	la manda con construction and the construction	and of the first of the second	al ed.	
4. Catalog Description (360		eeded for New Courses or Tr	tie Changes.):	
industry. Current, volta	age, and power relationsh	rnating and direct curren nips in single and three-ph programmable logic con	nase electrical power sys	tems. Introduction to
5. If course requires field tr	ip check box: 🔲	_		
6. Credit Hours: Present	Lecture 2 Lab	¹ Total ³		
Propose	d: Lecture Lab	Total		
7. Prerequisites: Present:				
Proposed:		_		
8. Required for Majors: 🔀	Elective for Major	'S:		
9. Justification: Course no lo	_			
10. Semesters previously of	·			
11. List all co-listed courses 1)	, initialed by Dept. Chair, i 3)	f signature does not appe 5)	ar below.	
2)	4) //1	() 6)		
Recommended by Department	(Chair signature)	Huly		Date: 3-11-13
Recommended by DSCC	(Chair signature)	and Rober		Date: 3 - //- 13
Approved by Curricula Committ	(Ω)	Juit		Date: 4/12/2013
Approved by Faculty Senate:				_ Date:
	(Chair signature)			

Page: 19/25

Date: 4/12/2013 2:30:37 PM

		CC File # 84(03-2013-MET EN	G-365-20
Effective Year: 2013 Effec	tive Term: Summer 🔲 🛭 F	iall 🔀 Spring 🗌		
		Change Form (Co	•	
Course Changes (Check all cha	inges.)			
<u> </u>	 -	Credit Hours	Prerequisites 🗌	
Course Title 🗌 💢 C	atalog Description 🔲	Course Number 🗌	Co-listing	
Course Information (Sections	1-9 must be completed. Leav	e "Proposed" items blank if n	o change is being made	.}
1. Department: Materials Se	cience & Engineering	•		
2. Discipline and Course Nun	nber: Present: Met 365	Proposed:		
3. Course Title: Present: MI	crofabrication Materials a	nd Processes		
Proposed:				
Abbreviated Course Title	(24 Spaces or Less. Only nee	ded for New Courses or Title	Changes.):	
microelectromechanical	course on the materials as systems (MEMS), interco The emphasis will be on	nd processes used to fabrion nnect substrates and other the influence of structure	r microelectronic coп	ponents from starting
5. if course requires field trip	check box:			
6. Credit Hours: Present:	Lecture 3 Lab	© Total 3		
Proposed	: Lecture Lab	Total		
7. Prerequisites: Present:				
Proposed:				
8. Required for Majors: 🔀	Elective for Majors:			
9. Justification: Course no long	ger offered			
10. Semesters previously offe	ered as an experimental co	urse (101, 201, 301, 401):		
 List all co-listed courses, i 1) 	nitialed by Dept. Chair, if s 3)	ignature does not appear b 5)	oėlow.	
2)	4)	// ⁶⁾ _		
ecommended by Department	(Chair signature)	Haelm_		Date: 2/22/13
ecommended by DSCC	(Chair signature)	· Kapa		Date: 3 - // - 13
pproved by Curricula Committee	1).\~ 45	Tinh .		Date: 4/12/2013
pproved by Faculty Senate:	(Chair signature)			Date:

From: 573 341 4362 Page: 20/25

Date: 4/12/2013 2:30:37 PM

		CC File # 8	404-2013-MET ENG-	385-20
Effective Year: 2013 Eff	fective Term: Summer 📋	Fall 🛛 Spring 🗌		
		e Change Form (Ceating or modifying perman	•	
Course Changes (Check all	<u> </u>	C 4th 11 [p	
New Course		Credit Hours	Prerequisites	
	Catalog Description		Co-listing	
• • • • • • • • • • • • • • • • • • • •		eave "Proposed" items blank it	no change is being made.)	
	s Science & Engineering	-		
•	Number: Present: Met 385	Froposed:		
3. Course Title: Present:	 -			
Proposed				
	- ,	needed for New Courses or Tit	le Changes.):	
	i plastic behavior of metal	lic single crystals and polyo I are applications to metal		
5. if course requires field	trip check box: 🔲			
6. Credit Hours: Preser	nt: Lecture 3 Lab	ク Total ³		
Propo:	sed: Lecture Lab	Total		
7. Prerequisites: Present:				
Proposed:				,
8. Required for Majors:	Elective for Majo	rs: 🔲		
9. Justification: Course no	longer offered			
10. Semesters previously	offered as an experimenta	l course (101, 201, 301, 401	.):	
11. List all co-listed course 1)	es, initialed by Dept. Chair, 3)	if signature does not appear 5)	ar below.	
2)	4)	_/ 6)		
Recommended by Departmer	nt	Hulrs		Date: 2/22/13
Recommended by DSCC	(Chair signature)	Stephs Kaper		Date: 3 - (1 - 13
Approved by Curricula Comm	ر معلم ()	il Janto		Date: 4/12/2013
Approved by Faculty Senate:_	(Chair signature)			Date:
	· - - ,			

Page: 21/25

Date: 4/12/2013 2:30:38 PM

CC File # 8405-2013-MET ENG-403-20

Effective Term: Summer Fall Spring Effective Year: 2013 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Course Deletion Credit Hours Prerequisites -New Course Course Title Catalog Description Course Number Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Met 403 3. Course Title: Present: High Temperature and Corrosion Resistant Alloys Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: Fabrication and use of nickel, titanium, and refractory metal based alloys for use at high temperatures or in chemically corrosive environments. Properties and strengthening mechanisms of these alloys. Theory of high temperature oxidation and corrosion and design of alloys to prevent them. Prerequisites: Mt Eng 217, 218. Proposed: 5. If course requires field trip check box: O Total 3 3 Lab 6. Credit Hours: Present: Lecture Total Lab Proposed: Lecture 7. Prerequisites: Present: Proposed: Elective for Majors: 8. Required for Majors: 🔀 9. Justification: Course no longer offered 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 1) 2) 4) Recommended by Department (Chair signature) Recommended by DSCC (Chair signature) Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate:__ (Chair signature)

From: 573 341 4362 Page: 22/25 Date: 4/12/2013 2:30:38 PM

cc File # 8408-2013-MET ENG-125-32 Spring 🔀 Effective Term: Summer 🔲 🛛 Fall Effective Year: 2013 **Course Change Form (CC)** This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prerequisites 🔀 Credit Hours Course Deletion [New Course Co-listing Course Number Catalog Description Course Title Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Met 125 Proposed: 3. Course Title: Present: Chemistry of Materials Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: Basic Inorganic Chemistry of Materials. Topics will include chemical properties, structure and bonding of solids, energy, enthalpy, entropy, thermochemistry, kinetics and rate processes. Application of chemistry principles to materials engineering through flowsheeting, reactor design, materials/metals processing and the environment. Prerequisite: Chem 1. Proposed: Basic Inorganic Chemistry of Materials. Topics will include chemical properties, structure and bonding of solids, energy, enthalpy, entropy, thermochemistry, kinetics and rate processes. Application of chemistry principles to materials engineering through flowsheeting, reactor design, materials/metals processing and the environment. Prerequisite: Chem 1. with "C" or better. 5. If course requires field trip check box: 3 3 Lab Total Lecture Present: 6. Credit Hours: Total Proposed: Lecture Lab 7. Prerequisites: Present: Chem1 Proposed: Chem 1 with "C" or better grade in CHEM 1 Elective for Majors: 8. Required for Majors: 🔀 9. Justification: New department standard to improve student success 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 5) 3) 1) 4) 2) Recommended by Department (Chair signature Recommended by DSCC (Chair signature) Approved by Curricula Committee: (Chair signature)

Date

(Chair signature)

Approved by Faculty Senate:

Page: 23/25

Date: 4/12/2013 2:30:38 PM

CC File # 8409-2013-MET ENG-202-32

Effective Year: 2013 Effective	ve Term: Summer 🔲 🛭 Fa	all 🗵 Spring 🗌		
		Change Form (CC)		
 /		 _	Prerequisites 🔀	
Course Information (Sections 1-	9 must be completed. Leave	e "Proposed" items blank if no o	thange is being made.)	
1. Department: Materials Scient	·	·		
2. Discipline and Course Numb		 Proposed:		
3. Course Title: Present: Extra	active Metallurgy Lab			
Proposed:				
Abbreviated Course Title (2	24 Spaces or Less. Only nee	ded for New Courses or Title Ch	anges.):	
and electrometallurgy. Pro approved by 5&T. Proposed: A series of labo	atory experiments design erequisites: Preceded or pratory experiments design	ned to illustrate the principle accompanied by Mt Eng 20 igned to illustrate the princi accompanied by Mt Eng 20	3, or an equivalent tr	aining pro gram
5. If course requires field trip o	check box: 🔲			
6. Credit Hours: Present:	Lecture 🔑 Lab	1 Total }		
Proposed:	Lecture Lab	Total		
7. Prerequisites: Present: Met203 prior or Proposed: Met 203 prior	•		5.	
	, , , , , , , , , , , , , , , , , , ,	ded or accompania	l by METENE	503
8. Required for Majors: 🔯	Elective for Majors:			
9. Justification: New departme 10. Semesters previously offer				
11. List all co-listed courses, in	•		elow	
1)	3)	5)		
2)	4)	, (6)		
Recommended by Department	(Chair signature)	Luly		Date: 2/22/13
Recommended by DSCC	(Chair signature)	one Kapen		Date: 3 - / 1- 13
Approved by Curricula Committee:	(Chair signature)	fants		Date: 4/2/74/3
Approved by Faculty Senate:	(Chair signature)		to and to the	Date:

From: 573 341 4362 Page: 24/25 Date: 4/12/2013 2:30:39 PM

CC File # 8410-2013-MET ENG-203-32 Effective Term: Summer Fall Spring Effective Year: 2013 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours Prerequisites 🖂 Course Deletion New Course Catalog Description Course Number Co-listing Course Title Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Met 203 Proposed: 3. Course Title: Present: Introduction to Extractive Metallurgy Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: Production and refining of metals by pyrometallurgy, hydrometallurgy, and electrometallurgy. Emphasis on heat and mass balance calculations for the unit processes of metals extraction. Introduction to the principles of combustion, heat utilization and recovery. Prerequisite: Mt Eng 125. Proposed: Production and refining of metals by pyrometallurgy, hydrometallurgy, and electrometallurgy. Emphasis on heat and mass balance calculations for the unit processes of metals extraction. Introduction to the principles of combustion, heat utilization and recovery. Prerequisite: Mt Eng 125 with "C" or better. 5. If course requires field trip check box: Lecture 3 Lab 6. Credit Hours: Present: Proposed: Lecture Lab Total 7. Prerequisites: Present: Met 281, or Cer 259, or Ch Eng 143 Proposed: Met 125 with "C" or better grade in MET ENG 125 Elective for Majors: 8. Required for Majors: 🔀 9. Justification: New department standard to improve student success 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 2) Recommended by Department (Chair signature) Recommended by DSCC (Chair signature). Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate:_ (Chair signature)

Page: 25/25

Date: 4/12/2013 2:30:39 PM

CC File # 8411-2013-MET ENG-204-32

Effective Term: Summer T Fall [] Spring Effective Year: 2013 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prerequisites 🔀 Credit Hours Course Deletion New Course Co-listing Catalog Description Course Number Course Title Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering Proposed: 2. Discipline and Course Number: Present: Met 204 3. Course Title: Present: Transport Phenomena in Metallurgy Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: The application of the principles of fluid flow and heat transfer to the solution of practical problems in metallurgical engineering. Prerequisite: Civ Eng-50. Proposed: The application of the principles of fluid flow and heat transfer to the solution of practical problems in metallurgical engineering. Prerequisite: Giv Eng 50 with "C" or better. 5. If course requires field trip check box: Total Lab 6. Credit Hours: Present: Proposed: Lecture Lab Total 7. Prerequisites: Present: Civ Eng 50 Proposed: CivEng 50 with "C" or better grade in CIV ENG 52 8. Required for Majors: 🔀 Elective for Majors: 9. Justification: New department standard to improve student success 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 5) 1) 6) 2) 4) Recommended by Department Recommended by DSCC. Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate: (Chair signature)

Page: 1/28

Date: 4/12/2013 2:39:39 PM

	2014		CC File #	8412-2013-MET ENG	-215-32
		Term: Summer	Fall Spring 🔏		
			Change Form		
Course Changes (C	heck all change	es.)			
New Course	Cour	se Deletion 🔲	Credit Hours 🔲	Prerequisites 🔀	
Course Title	Cata	log Description 🗌	Course Number 🗌	Co-listing 🗌	
Course Informatio	n (Sections 1-9	must be completed. Le	ave "Proposed" items blai	nk if no change is being made.)	i
1. Department: N	Naterials Scien	nce & Engineering	<u>د</u>		
		r: Present: Met 215			
3. Course Title: P	resent: Funda	mentals of Materials	s Behavior		
P	roposed:				
Abbreviated C	ourse Title (24	Spaces or Less. Only n	eeded for New Courses o	r Title Changes.):	
4. Catalog Descrip	otion (360 chara	acter spaces or less.)	deformation; mechanic	cal testing; creep; fracture :	mechanics and fatigue
P rerequisites:	Met Eng 121	and Civ Eng 110.			
Proposed: An	introduction	to crystal defects an		nical testing; creep; fracture	e mechanics and
fatigue. Prere	quisites: Met	Eng 121 and Civ Eng	110 with a "C" or bette	er.	
5. If course requir	es field trip ch	neck box: 🔲			
6. Credit Hours:	Present:	Lecture 3 Lab	<i>o</i> Total ろ		
	Proposed:	Lecture Lab	Total		
7. Prerequisites: Present: Met	ورو 121 and Civ E	ng 110			
Proposed: M	e c 121 and Civ	rE 110 with " C" or be	tter grade in	both METENG	121 and
8. Required for M	lajors: 🔲	Elective for Majo	rs: 🔲	C.	IV ENG-110
9. Justification: N	lew departmen	t standard to improve	student success		
10. Semesters pre	eviously offere	ed as an experimental	course (101, 201, 301,	401):	
11. List all co-liste	d courses, init	tialed by Dept. Chair,	if signature does not ap	opear below.	
1)		3)	5)		
2)		4)	(6)		11
Recommended by D	epartment	(Chair signature)	2 Hume		Date: 2/22/13
Recommended by D		(Chair signature)	of agen		_ Date:3 - / 1 - 13
Approved by Curricu	la Committee:_	(Chair signature)	b Janik		_ Date: 4/12/28/3
Approved by Faculty	Senate:				
	1	(Chair signature)			

From: 573 341 4362 Page: 2/28 Date: 4/12/2013 2:39:40 PM

Effective Year: 2013 Effective Term: Summer Fall Spring X	217-32						
Course Change Form (CC)							
This form is for creating or modifying permanent courses.							
Course Changes (Check all changes.) New Course Course Deletion Credit Hours Prerequisites							
Course Title Catalog Description Course Number Co-listing							
Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.)							
1. Department: Materials Science & Engineering							
2. Discipline and Course Number: Present: Met217 Proposed:							
3. Course Title: Present: Metals Microstructural Development							
Proposed:							
Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.):							
4. Catalog Description (360 character spaces or less.) Present: Fundamentals of microstructural developments as relating to solid solutions, solidification transformations; phase diagrams; case studies. Prerequisite: Met Eng 121. Proposed: Fundamentals of microstructural developments as relating to solid solutions, solidifications transformations; phase diagrams; case studies. Prerequisite: Met Eng 121 with a "C" or better; accepted by Ger Eng 259.	tion and						
5. If course requires field trip check box:							
6. Credit Hours: Present: Lecture $oldsymbol{3}$ Lab $oldsymbol{o}$ Total $oldsymbol{3}$							
Proposed: Lecture Lab Total							
7. Prerequisites: Present: Met 121 Proposed: Met 121 with "C" or better accompanied or preceded by Cer E 259							
8. Required for Majors: Elective for Majors:							
9. Justification: New department standard to Improve student success							
10. Semesters previously offered as an experimental course (101, 201, 301, 401):							
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.1)3)5)							
2) 4) /1 (6)							
Recommended by Department (Chair signature)	Date: 2/21/13						
Recommended by DSCC (Chair signature)	Date: 3 - 1 /- 13						
Approved by Curricula Committee: 2 January (Chair signature)	Date: 4/12/2013						
Approved by Faculty Senate:(Chair signature)	Date:						

Date: 4/12/2013 2:39:40 PM : 4/12/2010 2.0... CC File # 8425-2012 - Min Eng 476-10 From: 573 341 4362 Page: 3/28 Effective Year: 2013 Fall 🛛 Spring 🔲 Term: Summer 🗆 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prerequisites 🗌 Credit Hours Course Deletion New Course 🛛 Course Number 🗌 Co-listing \square Catalog Description 🗌 Course Title 🗌 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mining and Nuclear Engineering Proposed: Mi Eng 476 2. Discipline and Course Number: Present: 3. Course Title: Present: Proposed: Sustainability in Mining Sustainability In Mining Abbreviated Course Title: Sus In Mining (24 Spaces or Less, Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) Present: Proposed: Sustainability defined: social, economic & environmental impacts. Mining as sustainable development interventions. Mine planning for sustainability, sustainability assessment & reporting, sustainable mine closure & post-mining land use. Case studies. 5. If course requires field trip check box: \Box Total: Lab: Lecture: 6. Credit Hours: Present: Total: 3 Lab: 0 Lecture: 3 Proposed: 7. Prerequisites: Present: Proposed: Mi Eng 376 or instructor-consent. Elective for Majors: 8. Required for Majors: 🔯 This course is a core requirement of the Master of Engineering degree program in 9. Justification: Mining Engineering. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 2) 1) 5) 4) Date: <u>//-/4 -/2</u> Recommended by Department

Date:

(Chair signature)

(Chair signature)

(Chair signature)

(Chair signature)

Recommended by Discipline Specific Curricula Committee

Approved by Curricula Committee:

Approved by Faculty Senate: ___

From: 573 341 4362 Page: 4/28 Date: 4/12/2013 2:39:40 PM

Effective Year: 2017 Term: Summer [3 Fall ⊠ Spring 🗆]	CC File #	8426-d0	124-10 Eng
Telm Sammer E	•				124-10
	COUFSE This form is for	Change F	g permanent	courses.	
Course Changes New Course ⊠ Course Title □ Course Informat	(Check all changes.) Course Deletion Catalog Description	Credit Ho	ours 🗌 lumber 🗍	Prerequisite]
1. Department: Min					
2. Discipline and C	ourse Number:	Present :	Propo	osed: Mi Eng 43	24
Pro	4 SIMERS OF LESS. V	e Des <i>Undtrarou.</i> nly needed for New (nd Mine Courses or Tit	<i>Dc Scigol</i> le Changes.)	
design	n for underground n ground mine design		underground i ation; mine ei	mine design, g nvironmental s	eomechanical mine ystems; and
6. Credit Hours:	Present:	Lecture:	Lab:	Total:	
o. create floats.	Proposed:	Lecture: 3	Lab: O	Total: 3	
7. Prerequisites: Present:					
Proposed: Mi	Eng 324 or Equivale	ent			
		for Majors: requirement of the l	Master of Eng	ineering degre	e program in
10. Semesters prev	viously offered as at	n experimental cours	se (101, 201,	301, 401):	
11. List all co-listed	l courses, initialed b	y Dept. Chair, if sign	ature does no	ot appear belov	v.
1)	2)	3)			
4) Recommended by £		(Chair signature)	Do Ry		Date: <u>/1-/4-12</u> Date: /2-/9-12

Page: 5/28 Date: 4/12/2013 2:39:41 PM From: 573 341 4362 cc File # 8427-2012 - Min ling Effective Year: 2013 Spring 🔲 Fall 🛛 Term: Summer 🗌 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prerequisites 🗌 Credit Hours 🗌 Course Deletion 🗌 New Course 🛛 Co-listing 🔲 Course Number 🗌 Catalog Description \square Course Title 🗌 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) Department: Mining and Nuclear Engineering Proposed: Mi Eng 426 2. Discipline and Course Number: Present: 3. Course Title: Proposed: Surface Mine Design Abbreviated Course Title: Surf Mine Des Surface Mine Design (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) Present: Proposed: This course will focus on the determinants of surface mine design, geomechanical and geometrical mine design for open pit and strip mining; mine layouts optimization; mine environmental systems; and research directions in surface mine design and optimization. 5. If course requires field trip check box: \Box Total: Lab: Lecture: 6. Credit Hours: Present: Total: 3 Lab: 0 Lecture: 3 Proposed: 7. Prerequisites: Present: Proposed: Mi Eng 326 or Equivalent Elective for Majors: \square 8. Required for Majors: 🛛 This course is a core requirement of the Master of Engineering degree program in 9. Justification: Mining Engineering. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 2) 1)

4) 5) 6)	
Recommended by Department	Date: 1/-14-12
	Date: 12.14-, 7
Approved by Curricula Committee: (Chair signature)	Date: 4/17/7013
Approved by Faculty Senate:	Date:
(Chair signature)	

Page: 6/28 Date: 4/12/2013 2:39:41 PM

CC File # 8443-2013-MET ENG-221-32 Effective Term: Summer Fall Spring Effective Year: 2013 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Course Deletion Credit Hours Prerequisites 🖂 New Course Catalog Description Course Number Co-listing Course Title Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Met 221 Proposed: 3. Course Title: Present: Principles of Materials Processing Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: An introduction to various methods of processing of metals and influences of processing on design. Includes: casting, welding, shaping, inspection and testing. Prerequisite: Mt Eng 121. Proposed: An introduction to various methods of processing of metals and influences of processing on design. Includes: casting, welding, shaping, inspection and testing. Prerequisite: Mt Eng 121, with a "€" or better. 5. If course requires field trip check box: Lecture Lab 6. Credit Hours: Present: Lab Total Proposed: Lecture 7. Prerequisites: جيمياء Present: Met 12 Proposed: Met 121 with "C" or better grade in MET ENG 121 8. Required for Majors: 🔀 Elective for Majors: 9. Justification: New department standard to improve student success 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 2) 4) Recommended by Department (Chair signature) Recommended by DSCC (Chair signature) Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate:_ (Chair signature)

From: 573 341 4362 Page: 7/28 Date: 4/12/2013 2:39:42 PM

2	DY		CC File #	8444-2013-CER ENG	-259-32
ffective Year: 201	LS Effecti	ive Term: Summer 🗌	Fall 🛴 Spring 🗷		
			e Change Form	•	
Course Changes (C			contation	p5Z	
				Prerequisites 🔀	
·	·		Course Number 🔲		
•	_	,	eave "Proposed" items bla	nk if no change is being made.	.)
•		ence & Engineering	<u>.</u>		
7		ber: Present: Cer 259	•		
		rmodynamics of Mati	erals Materials		
	roposed:				
	,		needed for New Courses or	Title Changes.):	
• • • •	-	aracter spaces or less.) namic concepts are ap	plied to materials. Calci	alations involving enthalpy	. entropy, and Gibbs'
equilibira are Proposed: Ba free energy ar	presented. sic thermod re studied. I	P rerequisite: Met Eng lynamic concepts are a nter-relationships am	125 or Chem 3 . applied to materials. Cal	hasized. Fundamental condiculations involving enthal hasized. Fundamental condiculations	py, entropy, and Gibb
5. If course requir	es field trip	check box: 🔲			
6. Credit Hours:	Present:	Lecture 3 Lab	o Total 3		
	Proposed:	Lecture Lab	Total		
7. Prerequisites: Present: Met	125 or Cher	n 3		11/- 22/	146m2
Proposed: Me	t 125 or Ch	em-3 with "C" or bette	er grade in eith	er met enc 125	or chems
8. Required for Ma	ajors: 🔀	Elective for Majo	ors: 🔲		
9. Justification: No	ew departme	ent standard to improve	student success		
•	-	•	l course (101, 201, 301,	•	
11. List all co-listed 1)	d courses, ir	nitialed by Dept. Chair, 3)	if signature does not ap 5)	pear below.	
2)		4)///2 ~/	/ 4 6)		/ /
ecommended by De	partment	(Chair signatural)	Hullung		_ Date: 2/22/13
ecommended by DS	scc	(Chair signature)	na taper		Date: 3 - //- 13
pproved by Curricul	a Committee	a n 1	L Jant		_ Date: 4/12/2613
pproved by Faculty	Senate:	(Chair signature)			_ Date:
		(cuan signature)			

Page: 8/28

Date: 4/12/2013 2:39:42 PM

ス ロソ CC File # 8448-2013-CE	R ENG-291-32
Effective Year: 2013 Effective Term: Summer Fall Spring	
Course Change Form (CC) This form is for creating or modifying permanent courses.	
Course Changes (Check all changes.) New Course Course Course Deletion Credit Hours Prerequisit	es 🔀
Course Title Catalog Description Course Number Co-listing	
Course Information (Sections 1-9 must be completed, Leave "Proposed" items blank if no change is being	_
1. Department: Materials Science & Engineering	
2. Discipline and Course Number: Present: Cer 291 Proposed:	
3. Course Title: Present: Characterization of Inorganic Solids	
Proposed:	
Abbreviated Course Title (24 Spaces or Less, Only needed for New Courses or Title Changes.):	
4. Catalog Description (360 character spaces or less.) Present: X-ray diffraction analysis is emphasized including lattice parameter determination quantitative analysis methods, and sources of error. In addition, the basic principles of ot techniques including electron microscopy, thermal analysis, and energy dispersive spectroprecequisite: Cr Eng 102 or Mt Proposed: X-ray diffraction analysis is emphasized including lattice parameter determinal quantitative analysis methods, and sources of error. In addition, the basic principles of other proposed.	ther common characterization oscopy are discussed.
techniques including electron microscopy, thermal analysis, and energy dispersive spectro	oscopy are discussed.
Prerequisite: Cr Eng 102 or Mt 121 with a "C" or Detter.	
5. If course requires field trip check box:	
6. Credit Hours: Present: Lecture Lab Total	
Proposed: Lecture Lab Total	
7. Prerequisites: Present: Cer 102 or Met 121, or a similar introductory course on structure of solids	
Proposed: Ger 102 or Mct 121, or a similar introductory course on structure of solids, wit	-
8. Required for Majors: Elective for Majors:	either CER ENG 102 or MET
9. Justification: New department standard to improve student success	ENG 121 or
10. Semesters previously offered as an experimental course (101, 201, 301, 401):	
11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 5)	
2) 4) 1/2 ~ (1.6)	, ,
Recommended by Department(Chair signature)	Date: 3-/1-13
Recommended by DSCC (Chair signature)	Date: 3-/1-13
Approved by Curricula Committee: (Chair signature)	Date: 4/12/26/3
Approved by Faculty Senate:(Chair signature)	Date:

From: 573 341 4362 Page: 9/28 Date: 4/12/2013 2:39:42 PM CC File # 8449-2013-MET ENG-307-32 Effective Term: Summer | Fall | 1 Spring | Effective Year: 2013 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course Course Deletion Credit Hours Prerequisites 🔯 Course Title Catalog Description Course Number Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Met 307 Proposed: 3. Course Title: Present: Metals Casting Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: An advanced course in the materials and methods used in modern metals casting processes. Application of metallurgical principles to the casting of metals. Design of castings and metals casting mold features using commercial casting process simulation software. Prerequisite: Met Eng 221 or Mech Eng 153. Proposed: An advanced course in the materials and methods used in modern metals casting processes. Application of metallurgical principles to the casting of metals. Design of castings and metals casting mold features using commercial casting process simulation software. Prerequisite: Met Eng 221 or Mech Eng 153 with "C" or hetter. 5. If course requires field trip check box: 6. Credit Hours: Present: ☼ Total Lecture Proposed: Lecture Lab Total 7. Prerequisites: Present: Met 221 or MechE 153 Present: Met 221 or Mech 153

Proposed: Met 221 or Mech 153 with "C" or better grade in either MET ENG 221 or MECH ENG 153 8. Required for Majors: 9. Justification: New department standard to improve student success 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 5)

2)

Recommended by DSCC

Recommended by Department

Approved by Curricula Committee:

Approved by Faculty Senate:

4)

(Chair signature)

(Chair signature)

(Chair signature)

(Chair signature)

Date:

From: 573 341 4362 Page: 10/28 Date: 4/12/2013 2:39:43 PM CC File # 8450-2013-MET ENG-329-32 Effective Year: 2013 Effective Term: Summer Fall 5 Spring X Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Credit Hours New Course Course Deletion Prerequisites 🖂 Course Title Course Number Catalog Description Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Met 329 Proposed: 3. Course Title: Present: Material Selection, Fabrication & Failure Proposed: Abbreviated Course Title (24 Spaces or Less, Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: Factors governing the selection of materials for specific needs, fabrication, heat treatment, surface treatment, and other aspects in the production of a satisfactory component. Failure analysis and remedies. Lecture plus assigned problems. Prerequisites: Mot 217, 218, 221 Proposed: Factors governing the selection of materials for specific needs, fabrication, heat treatment, surface treatment, and other aspects in the production of a satisfactory component. Failure analysis and remedies. Lecture plus assigned problems. Prerequisites: Met 217, 218, and 221 with "C" or better. 5. If course requires field trip check box: O Total 6. Credit Hours: Present: Lecture Lab Proposed: Lecture Lab Total 7. Prerequisites: Present: Met 217, Met 218, and Met Present: Met 217, Met 218, and Met 221

Proposed: Met 217, Met 218, and Met 221 with "C" or better grade in all of MET ENG 217,

MET ENG 218,

Required for Majors:

And MET ENG 22, 8. Required for Majors: 9. Justification: New department standard to improve student success 10. Semesters previously offered as an experimental course (101, 201, 301, 401):

Present: Met 217, Met 218, and Met 221
Proposed: Met 217, Met 218, and Met 221 with "C" or better grade in all it mer end all's, mer end all'

(Chair signature)

From: 573 341 4362 Page: 11/28 Date: 4/12/2013 2:39:43 PM CC File # 8451-2013-MET ENG-331-32 Effective Year: 2013- Effective Term: Summer Fall Spring Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course Course Deletion Credit Hours Prerequisites 🔀 Course Title Catalog Description Course Number Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Met 331 Proposed: 3. Course Title: Present: Steels and Their Treatment Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: Industrially important ferrous alloys are described and classified. The selection of proper heat treatments to facilitate fabrication and to yield required service properties in steels suitable for various applications is considered. Prerequisites: Met Eng 217 and Met Eng 218. Proposed: Industrially important ferrous alloys are described and classified. The selection of proper heat treatments to facilitate fabrication and to yield required service properties in steels suitable for various applications is considered. Prerequisites: Met Eng 217 and Met Eng 218 with "C" or better-5. If course requires field trip check box: 6. Credit Hours: Total Present: Lecture Lab Proposed: Lecture Lab Total 7. Prerequisites: 🐠 Present: Met 217 and Met 218 Proposed: Met 217 and Met 218 with "C" or better grade in both MET ENG 217 and 8. Required for Majors: 🔀 Elective for Majors: 9. Justification: New department standard to improve student success 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 5) 2) 4) Recommended by Department

Date:

(Chair signature

(Chair signature

(Chair signature

(Chair signature)

Recommended by DSCC

Approved by Curricula Committee:

Approved by Faculty Senate:_

From: 573 341 4362 Page: 12/28 Date: 4/12/2013 2:39:43 PM CC File # 8452-2013-MET ENG-355-32 Effective Term: Summer 🔲 Fall 🔟 Spring 🗵 Effective Year: 2013 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course Course Deletion Credit Hours Prerequisites 🔀 Course Title Catalog Description Course Number Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science & Engineering 2. Discipline and Course Number: Present: Met 355 Proposed: 3. Course Title: Present: Process Metallurgy Applications Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: Application of thermodynamics to process metallurgy. Equilibrium calculations with stoichiometry and heat balance restrictions, phase transformations, and solution thermodynamics. Use of thermodynamic software to solve complex equilibria in metallurgical applications. Prerequisite: Cer Eng. 259. Proposed: Application of thermodynamics to process metallurgy. Equilibrium calculations with stoichlometry and heat balance restrictions, phase transformations, and solution thermodynamics. Use of thermodynamic software to solve complex equilibria in metallurgical applications. Prerequisite: Cer Eng 259 with "C" or better. 5. If course requires field trip check box: ○ Total 6. Credit Hours: Present: 3 Lab Lecture Proposed: Lecture Lab Total 7. Prerequisites: Present: Cer 259 Proposed: Cer 239 with "C" or better grade in CERENG 259 8. Required for Majors: Elective for Majors: 9. Justification: New department standard to improve student success 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

Approved by Curricula Committee:

(Chair signature)

Approved by Faculty Senate:

(Chair signature)

Date: 3-//-13

Date: 4/12/2013

Date: 4/12/2013

5)

1)

2)

Recommended by Department

3)

4)

(Chair signatur

From: 573 341 4362 Page: 13/28 Date: 4/12/2013 2:39:44 PM

2014		CC File# 84	153-2013-1	METENG-381
Effective Year: 2013 Effe	ctive Term: Summer 🔲	Fall Spring 🔀		
		Change Form (Citing or modifying permane		
Course Changes (Check all ch New Course (anges.) Course Deletion 🔲	Credit Hours 🔲	Prerequisites 🔀	
Course Title 🔲 💢	Catalog Description 🔲	Course Number 🔲	Co-listing	
Course information (Sections	1-9 must be completed. Leav	ve "Proposed" items blank if n	o change is being made	2.)
1. Department: Materials S	icience & Engineering		·	•
2. Discipline and Course Nu	mber: Present: Met 381	Proposed:		
3. Course Title: Present: Co	prosion and It's Preventio	n		
Proposed:				
Abbreviated Course Title	e (24 Spaces or Less. Only nec	eded for New Courses or Title (Changes.):	
4. Catalog Description (360 c Present: A study of the or Cer Eng 259. (Co-liste Proposed:	theories of corrosion and	its application to corrosion	and its prevention.	Prerequisite: Chem 263
5. If course requires field trip	check box: 🔲			
6. Credit Hours: Present:	Lecture 3 Lab C	7 Total 3		
Proposed	: Lecture Lab	Total		
7. Prerequisites: Present: Chem 243 or Co	er 259	E)11461		
Proposed: Pass Chem 24	3 or Cor 259 with "C" or b	etter grade in Ch	Fem 243 or	~ CER ENG 259
8. Required for Majors: 🔀	Elective for Majors:			
9. Justification: Encourage stu	rdent success through a bett	er understanding of core mate	erlal	
10. Semesters previously offe	ered as an experimental co	ourse (101, 201, 301, 401):		
11. List all co-listed courses, i 1) ChemE 381	nitialed by Dept. Chair, if s 3)	ignature does not appear b 5)	elow.	
2)	4)	6)		
Recommended by Department	(Chair Service)	Muthanan Son	Oathe	Date: 2/28/12
Recommended by DSCC	(Chair signature)			Date: 3-11-13
Approved by Curricula Committee	<u> </u>	l Jank		Date: 4/4/2013
Approved by Faculty Senate:	100 to			Date:
	(Chair signature)		"	P416:

(Revised December 2012)

From: 573 341 4362 Page: 14/28 Date: 4/12/2013 2:39:44 PM

CC File # 8454-2013-Eng Mg+-257-34

Effective Year: 2013 Effective	/e Term: Summer 🔲 🛭 Fall 🖸	Spring 🗌	J	
	Course Cha	ange Form (CC or modifying permanent	-	
	urse Deletion 🗌 Cred			
	alog Description 🖂 🗸 Cou			
Course Information (Sections 1-	·	oposed" items blank if no	change is being made.)	
Department: Eng Mg & Sys Discipline and Course Number	_	Proposed:		
3. Course Title: Present: Mate		•		
Proposed:	strais transmile and a rain col			
•	24 Spaces or Less. Only needed t	for New Courses or Title C	hanges.):	
4. Catalog Description (360 cha Present: The design and of the viewpoint of efficient comparison of various sys Proposed: The design and from the viewpoint of effi The layout of a plant to in systems will be made.	racter spaces or less.) bjectives of materials handli movement of materials and tems will be made. (Co-liste l objectives of materials hand cient movement of materials clude materials handling equ	ing equipment including products from the rece d with Eng Mg 257) dling equipment includi s and products from the	g diversity of applicate siving areas to the shi ing diversity of applicate e receiving areas to the sive side in the side of a policate side side side side side side side sid	ipping areas Cost cation in industry he shipping areas.
5. If course requires field trip of	theck box: []			
	Lecture 2 Lab 1 Total 3			
Proposed: 7. Prerequisites: Present: None Proposed:	Lecture Lab	Total		
8. Required for Majors:	Elective for Majors: 🛛			
9. Justification: Dropping the co	o-list with McEng 256, which is	being deleted with a sepa	arate form.	
10. Semesters previously offer	ed as an experimental course	e (101, 201, 301, 401):		
11. List all co-listed courses, in 1)	itialed by Dept. Chair, if signa 3)	iture does not appear b 5)	elow.	
2)	4)	6)		
Recommended by Department	(Chair signature)			Date: 0/19/13
Recommended by DSCC	(Chair signature)	e lozar		Date: 3 -//-/3
Approved by Curricula Committee	(Chair signature)	<u> </u>		Date: 4//2/24/3
Approved by Faculty Senate:	(Chair signature)		1. <u>80 - 10 - 17 - 17 - 17 - 17 - 17 - 17 - 17 - 1</u>	Date:

Effective Year: 2013

Effective Term: Summer Fall Spring

Page: 15/28

3 Date: 4/12/2013 2:39:44 PM CC File# *PY55 - 2013 - Mech Eng - 256 - 20*

Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prerequisites | Credit Hours Course Deletion 🗵 New Course Co-listing Course Number Catalog Description Course Title Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mech & Aero Engineering 2. Discipline and Course Number: Present: McEng 256 Proposed: 3. Course Title: Present: Materials Handling and Plant Layout Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: The design and objectives of materials handling equipment including dviversity of application in industry from the viewpoint of efficient movement of materials and products from the receiving areas to the shipping areas... Proposed: 5. If course requires field trip check box: Lecture 2 Lab 1 Total 3 Present: 6. Credit Hours: Total Lab Proposed: Lecture 7. Prerequisites: Present: None Proposed: Elective for Majors: 🔀 8. Required for Majors: 🔲 9. Justification: This course has been co-listed with Eng Mg 257. We are deleting only the McEng course. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 6) 2) Recommended by Department (Chair signature) Recommended by DSCC (Chair signature) Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate:_ (Chair signature)

Effective Year: 2013

Effective Term: Summer Fall Spring

Page: 16/28

Date: 4/12/2013 2:39:45 PM

CC File # 8456-2013-Mech Eng-316-20

Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course Course Deletion Credit Hours Prerequisites Course Title Catalog Description Course Number Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mech & Aero Engineering 2. Discipline and Course Number: Present: McEng 316 Proposed: 3. Course Title: Present: Concurrent Engineering II Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: Students will form groups and then using the electronic data based approach apply the concurrent engineering process to develop products...(co-listed with AeEng 316) Proposed: 5. If course requires field trip check box: 6. Credit Hours: Present: Lecture 0 Lab 3 Total 3 Proposed: Lecture Lab Total 7. Prerequisites: Present: AeEng 315 or McEng 315 Proposed: 8. Required for Majors: Elective for Majors: 9. Justification: This course has not been taught in many years. Delete both McEng 316 and the co-listed AeEng 316. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) AteEng 316 6) Recommended by Department (Chair signature) Recommended by DSCC (Chair signature) Approved by Curricula Committee: (Chair signature) Approved by Faculty Senate: Date: (Chair signature)

From: 573 341 4362 Page: 17/28 Date: 4/12/2013 2:39:45 PM

cc File # 8457-2013- Mech Eng-315-33

Effective Year: 2103	Effective Term: Sum	mer 🗌 🛭 Fall 🔯 Spring 🛭
----------------------	---------------------	-------------------------

Course Change Form (CC) This form is for creating or modifying permanent courses.

Course Changes (C New Course		- '		C		🗖	
Course Title	_			Credit Hours		Prerequisites	
	_		<u></u>	Course Number	—	Co-listing	
Course Information			pleted. Leav	ve "Proposed" items	s blank if no	change is being made	≥.)
1. Department: N			MECH				
2. Discipline and C			_	5 Proposed:			
3. Course Title: Pr	esent: Cond	current Engin	eering I				
Pr	oposed: Co	ncurrent Eng	ineering				
Abbreviated C	ourse Title (24 Spaces or Le	ess. Only nee	eded for New Cours	es or Title Ch	nanges.): Concurre	nt Engineering
to set up quar	ents will be atitative req	introduced to uirements an	o the concu d then use	a quantitative ra	ting proces	s to identify the cr	pment. They will learn itical requirements , and supportability will
5. If course require	es field trip o	heck box: 🗀					
6. Credit Hours:	Present:	Lecture 3	Lab 0 To	tal 3			
	Proposed:	Lecture	Lab	Total			
7. Prerequisites: Present: Mc E	h <i>EC/†</i> ng 213 or A	NECO EEng 231, and	CVV Seveng 11	0			
Proposed:		Flanki a	fan Balana	. 🖂			
8. Required for Ma	_		-			-4 1 N- 1 1-1	*
				•		ot need to be identif	led as the first.
10. Semesters pre	•	•			-		
11. List all co-listed		itialed by Dep	ot. Chair, if	5)	ot appear be	elow.	
2) Recommended by De	enartment		<u> </u>	6)			Date: 7/20/2013
		(Chair signature)	0.				_
Recommended by DS	.cc	/	X445	r gagler			Date:3 - // ~ / 3
Approved by Curricul	a Committee:	(Chair signature) (Chair signature)	Dril	First			Date:4/12/2013
Approved by Faculty :	Senate:	-				w . 	Date:
		(Chair signature)					

Page: 18/28

Date: 4/12/2013 2:39:45 PM

CC File # 8458-2013-Much Eng-381-32

Effective Year: 2013 Effective Term: Summer | Fall | Spring | Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course Course Deletion Credit Hours Prerequisites 🖂 Course Title Catalog Description Course Number Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mech & Aero Engineering 2. Discipline and Course Number: Present: McEng 381 Proposed: 3. Course Title: Present: Mechanical and Aerospace Control Systems Proposed: Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): 4. Catalog Description (360 character spaces or less.) Present: Synthesis of mechanical and aerospace systems to perform specific control functions. Response and stability are studied. Singular value analysis for stability margins is introduced. (Co-listed with Ae Eng 381) Proposed: If course requires field trip check box: 6. Credit Hours: Present: Lecture 3 Lab 0 Total 3 Proposed: Lecture Lab Total 7. Prerequisites: Mc Eng 279 or Ae Eng 361 Proposed: Mc Eng 279 or Ae Eng 261 8. Required for Majors: Elective for Majors: 9. Justification: Lower level prerequisite is sufficient for the current material covered. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. Ae Eng 381 6) Recommended by Department (Chair signature) Recommended by DSCC (Čhair signature) Approved by Curricula Committee: (Chair signature) Approved by Faculty Senate:_ (Chair signature)

From: 573 341 4362 Page: 19/28 Date: 4/12/2013 2:39:46 PM

2014

cc File # 8459 - 2013 - Mech Eng -363-32

Effective Year: 2013 Effective Term: Summer Fall Spring

Course Change Form (CC)

This form is for creating or modifying permanent courses.

 					
Course Changes (Course [s.) se Deletion 🔲	Credit Hours	Prerequisites 🖂	
Course Title	Catalo	og Description 🛛	Course Number	· _ ·	
Course Informatio	<u>n</u> (Sections 1-9 n	nust be completed. Le	ave "Proposed" items bl	ank if no change is being mad	ie.)
1. Department: N	/lech & Aero En	ngineering			
2. Discipline and (Course Number	: Present: McEng 3	663 Proposed:		
3. Course Title: P	resent: Princip	les and Practice of (Computer Aided Desig	şn	
4	roposed:				
Abbreviated C	Course Title (24)	Spaces or Less. Only n	eeded for New Courses	or Title Changes.):	
Present: This representatio commercial C Proposed: Le surfaces and	course introdu ons of curves an AD/CAM packa ctures cover the solids, CAD/CA	nd surfaces, modelin ages to gain experie e fundamentals of c M data exchange, a	ng of solids, and graph nces and to help gras computer-aided desig	n with emphasis on geomo	also practice with etric modeling of curves,
5. If course requir	es field trip che	eck box: 🔲			
6. Credit Hours:	Present: Le	ecture 2 Lab 1 T	otal 3		
	Proposed: Le	ecture Lab	Total		
7. Prerequisites: 7. Present: Gmp	<i>(DMPSL)</i> + 5 c 53 or 73 or	<i>MECH ENG</i> - 74, Mc Eng 161, at l	least junior standing		
	mps <u>el</u>	or 74, Mc Eng 161, N MCLIFEAL Elective for Major	⁄lath 22, at least junio rs: ⊠	r standing	
9. Justification: T	he description is	reworded to reflect o	current coverage. The a	dditional math prereg is need	ded.
10. Semesters pre	viously offered	l as an experimental	course (101, 201, 301	1, 401):	
		aled by Dept. Chair,	if signature does not a 5)	appear below.	
2)	/	4) //	6)		_ ,
Recommended by Di		hair signature)			
Recommended by D	scc	hair signature)	photopy_		Date: 3 ~ / 1 ~ / 3
Approved by Curricu	la Committee:	hair signature)	l July		Date: 4/12/003
Approved by Faculty					Date:
.t		hair signature)			

From: 573 341 4362 Page: 20/28 Date: 4/12/2013 2:39:46 PM

2014

CC File # 8460-2013-Aero Eng-213-32

Effective Year: 2013 Effective Term: Summer Fall | Spring X

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all cha	anges.)			
	Course Deletion 🔲	Credit Hours	Prerequisites 🔀	
Course Title 🗌 💢 🤇	Catalog Description 🔲	Course Number	Co-listing	
Course Information (Sections	1-9 must be completed. Lea	ave "Proposed" items blank	if no change is being made.)	
1. Department: Mech & Ae	ro Engineering		<u> </u>	
2. Discipline and Course Nur	AGRC mber: Present: Ae Eng 2:	13 Proposed:		
3. Course Title: Present: Ae	rospace Mechanics I			
Proposed:				
Abbreviated Course Title	e (24 Spaces or Less. Only ne	eeded for New Courses or T	itle Changes.):	
4. Catalog Description (360 c Present: Introduction to orbits and general theor Proposed:	celestial mechanics and	an analytical study of s	pace flight. Emphasis is pla	ced on satellite
5. If course requires field trip	check box:			
6. Credit Hours: Present:	Lecture 3 Lab 0 To	otal 3		
Proposed	l: Lecture Lab	Total		
7. Prerequisites: Present: A grade of "C"	or better in Ae Eng 160 (or McEng 160), Math 14	(or 8), 15 (or 21), 22, and P	hysics 23
			Mech Eng 160), Math 14 (
8. Required for Majors: 🛛	Elective for Majors	s: 🔲		
9. Justification: Additional ma	ath background needed.			
10. Semesters previously offe	ered as an experimental o	course (101, 201, 301, 40	1):	
11. List all co-listed courses, 1)	initialed by Dept. Chair, if	f signature does not appe 5)	ear below.	
2)	A) 0 /	6)		- /
ecommended by Department _	(Chair signature)			Date: 4/20/2013
ecommended by DSCC	(Chair signature)	- Kaper	c	late: <u>5-7/-13</u>
pproved by Curricula Committe	e: Abrul (Chair signature)	b fints	p	rate: 4/12/2013
pproved by Faculty Senate:	(Chair signature)			Date:

From: 573 341 4362 Page: 21/28 Date: 4/12/2013 2:39:46 PM CC File # 8461-2013-ALP-397-10 Effective Year: みの/3 Term: Summer 🗀 Fall [7 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course 🗹 Course Deletion Credit Hours Prerequisites 🔲 Course Title Catalog Description La Course Number 🔄 Co-listing **Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: ALP 2. Discipline and Course Number: Proposed: 397 Present : 3. Course Title: Present: Proposed: Multidisciplinary Studies Capstone Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) Present: Proposed: Individually designed by the student and advisor with the approval of the advisory committee, this course is to reflect the student's ability to synthesize methods and knowledge from each focus area in his/her program into an academically coherent product. 5. If course requires field trip check box: 6. Credit Hours: Present: Lecture: Lab: Total: Proposed: Lecture: 3 Total: 3 Lab: 🔿 7. Prerequisites: Present: Proposed: Senior status 8. Required for Majors: 🗹 Elective for Majors: 9. Justification: This is the final course in the Bachelor of Multidisciplinary Studies degree program. Semesters previously offered as an experimental course (101, 201, 301, 401); 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 2) 4) 5) Recommended by Department (Chair signature) Recommended by Discipline Specific Curficula Committee (Chair)signature Approved by Curricula Committee: Chair signature) Approved by Faculty Senate: _ Date: (Chair signature)

From: 573 341 4362 Page: 22/28 Date: 4/12/2013 2:39:47 PM

		CC File# 👂	462-2013-Physics -382	1-10
Effective Year: 2013	Effective Term: Summer		<i>y</i>	
		Change Form (Cating or modifying perman	•	
Course Changes (Chec		Credit Hours	Prerequisites 🔲	
<u>—</u>	-	· · · · · ·	Co-listing	
•	ections 1-9 must be completed. Lea			
1. Department: Phys			· · · · · · · · · · · · · · · · · · ·	
,	rse Number: Present:	PRISICS Proposed: 382		
•	ent: Transport in Nanostructure	s: An Introduction ,		
Prope	``			
Abbreviated Cour	se Title (24 Spaces or Less. Only ne	eded for New Courses or Tit	e Changes.): Nanostructures	
Present: The cou wave (electron a	n (350 character spaces or less.) for rise overviews how wave intefe and light) transport in modern reviews, and photonic crystals.	rence, energy quantizatio anostructured materials a	n and tunneling phenomena influence t nd devices such as quantum dots, quant	:he tum
5. If course requires f	ield trip check box: 🔲			
	esent: Lecture 3 Lab 0 To oposed: Lecture 4 Lab 4 To			
7. Prerequisites: Present: Physics	107 or 207,			
Proposed: 🕹		-		
8. Required for Major		•		
	vas an experimental course that w)) 	
	usty offered as an experimental			
11. List all co-listed co	ourses, initialed by Dept. Chair, i 3)	r signature does not appea 5)	it below.	
2)	4)	6)		
Recommended by Depar	0 10		Date: 2 - 26	<u>-/3</u>
Recommended by DSCC	(1) \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	<u> </u>	Date: 3/8/2	0/3
Approved by Curricula C	ommittee: (Chair signature)		Date: <u>411242</u>	Ф <i>(</i> 5
Approved by Faculty Ser	nate:(Chair signature)		Date:	_

(Revised December 2012)

Page: 23/28 Date: 4/12/2013 2:39:47 PM From: 573 341 4362 cc File # 8463-2013-ELECEN6-339-10 Effective Term: Summer | Fall | Spring | Effective Year: 2013 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course 🖂 Course Deletion Credit Hours Prerequisites 🔲 Course Title Catalog Description Course Number Co-listing Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Electrical & Computer Engineering 2. Discipline and Course Number: Present: EE 301 Proposed: EE 339 3. Course Title: Present: Autonomous Mobile Robots Proposed: Autonomous Mobile Robots Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.): Autonomous Mobile Robots 4. Catalog Description (360 character spaces or less.) Present: This course will provide an introduction to mobile robots and current approaches to robot autonomy. Topics include mobile robot systems, modeling and control, sensors and estimation, localization and mapping, and motion planning. Proposed: same as above

5. If course requires field trip check box: 6. Credit Hours: Present: Lecture 3 Lab 0 Total 3 Proposed: Lecture 3 Lab 0 Total 3 7. Prerequisites: Present: EE 231 or equivalent and Stat 217 or equivalent, or consent of instructor Proposed: EE 231 or equivalent and Stat 217 or equivalent, or consent of instructor-8. Required for Majors: 🗌 Elective for Majors: 🔀 9. Justification: This is a popular and relevant course for the control area. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): FS2012 & SP2013 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) 3) 2) 4) 6) Recommended by Department _ (Chair signature) Recommended by DSCC (Chair signature)

Approved by Curricula Committee:

Approved by Faculty Senate:

(Chair signature)

(Chair signature)

Date:

Page: 24/28

Date: 4/12/2013 2:39:47 PM

EC# 2459- FS2013- NUC Eng-301 Effective Year: 2013 Effective Term: Fall X Spring Summer **Experimental Course Form (EC)** An EC form must be submitted before an experimental course is to be offered. EC forms approved Spring 2009 or later allow the course to be offered twice at any time during the following three year period. After an experimental course has been offered twice, a CC form may be submitted to request a permanent course number. A new course that is required as part of a degree program, minor, or graduate certificate may be submitted on a CC form to receive a permanent course number. Co-listed offerings should be submitted on one form, originating from the primary discipline. Department: Mining and Nuclear Engineering NUC ENG Discipline and Course Number: NE 301 Course Title: Applied Mathematics in Nuclear Engineering # Abbreviated Title (24 spaces or less): Applied Math in NE # Instructor(s): Dr. Gary E. Mueller Credit Hours: Lecture 3.0 Total .3 Lab O Prerequisites: NE 303 Semester(s) previously taught: FS2008 Brief Course Description (360 character spaces or less): Application of ordinary and partial differential equations in the solution of nuclear engineering problems, particularly with the neutron kinetics equations. Bessel's equation and special functions, eigenvalue problems, Green's function, integral methods and transformations. List all co-listed courses: Include initials of Department Chair, if signature is not already included below. 1) 3) 2) 4) 6) Recommended by Department: (Chair signature)

Approved by Curricula Committee:

Page: 25/28

Date: 4/12/2013 2:39:48 PM

Effective Term: FS13

EC File # 2461- Fall 2013- Arch Eng...

Experimental Course Form (EC)

This form must be filed with the Secretary to the Campus Curricula Committee, after the department chair's and college dean's notation, by the appropriate deadline. Filing deadlines for inclusion in the pre-registration Schedule of Classes are as follows:

> Summer and Fall Semester Offerings - January 1 Winter Semester Offerings - August 1

Filing deadlines for inclusion in the Revised Schedule of Classes are April 30 and October 1. An EC form must be submitted each semester it is to be offered, not to exceed two offerings. An experimental course that is required should be submitted on a CC form. Co-listed offerings should be submitted on one form, originating from the primary discipline.

 					7
	^-	 000	L D/	una	AFIRA
 	LII	 lege:		,,,,,,	

Department: CArEE

Discipline and Course Number: ArchE 301

Course Title: Passive Solar Engineering

Abbreviated Title (24 spaces or less): Solar Engineering

Instructor(s): Baur

Credit Hours:

Lecture: 2

Lab: 1

Total: 3

Prerequisites: ME 371 or instructors consent

Semester(s) previously taught: New

Brief Course Description: (40 words or less)

This course will treat topics in passive solar analysis and design. It will deal with various types of passive space heating and cooling systems applying principles of theory to actual application through the use of both computer modeling techniques and actual case studies. Both instantaneous and longterm performance will be analyzed. Economics and construction topics will be discussed.

List all co-listed courses: Include initials of included below.	f Dept. Chair(s) and Dean(s) if signatures are not already	
1.	4.	
2.	5.	
3.	6 1 1 -	
Department Chair:	Date: 2/11/3	
College/School Dean:	ignature Date: 3-11-13	
UMR Curricula Committee:	Date: 4-/12/2013	

(Revised 2/14/2002)

From: 573 341 4362 Page: 26/28 Date: 4/12/2013 2:39:48 PM

ArchE 301 - PASSIVE SOLAR ENGINEERING

Instructor: Stuart W. Baur, Ph.D., AIA

Civil, Architectural and

Environmental Engineering

Office:

Butler Carlton Hall - Room 329

Phone:

573-341-7236

Email Address: baur@mst.edu

Class Hours: Lec: T 10:00am-10:50am

<u>Text:</u> Principles of Solar Engineering, F. Kreith, J. Kreider, D.Y., Goswami

Heating, Cooling and Lighting

N. Lechner

<u>Catalog Description</u>: This course will treat topics in passive solar analysis and design. It will deal with various types of passive space heating and cooling systems. Both instantaneous and long-term performance will be analyzed. Economics and construction topics will be discussed.

<u>Catalog Materials</u>: Notes will be distributed by the instructor at the start of the course and periodically throughout the semester. A selection of books will be kept on reserve in the University library. New information relating to the subject matter will be introduced throughout the course and will be implemented when and where possible.

<u>Course Objectives</u>: The purpose of this course is to expose students to the current, state-of-the-art methods for analyzing passive solar methods in buildings. This is a graduate course and a measure of independent initiative is expected along with the usual expectation for the high quality work commensurate with graduate school. Both engineering and economic aspects of solar conversion will be emphasized. To synthesize these disciplines a term project will be required of each student as described below.

<u>Project:</u> Each student will be required to complete a project by the end of the semester. The project may be selected from the attached list or devised independently pending prior approval. The project must be approved by the instructor. The final report for each project will be distributed electronically to the rest of the class for future use in their professional careers. Therefore, the topics have been selected with regard to practical utility and to innovative results.

Each report (except the first) must include:

- o abstract
- o introduction and problem statement
- o results to date and project status
- o problems encountered and their solutions
- o conclusions
- bibliography
- appendices (including, for example, computer programs and output)

The report will outline a description in detail of the final output of the project (the details of the format of this report are covered by a separate handout). An oral presentation of the results will be made near the end of the semester. Copies of the final report will be provided to each member of the class in electronic form along with two paper copies for the instructor. Progress on projects will be discussed periodically in class. The highest quality reports will be submitted for publication in archival journals if the authors so choose.

Grade Policy: Grades will be assigned using the following grading scheme:

Homework - 40% Case Studies - 40% Final Project - 20%

Grade Basis: 70 > D > 60, 80 > C > 70, 90 > B > 80, 100 > A > 90

There are no exams in this course. No curve will be used on the grades

From: 573 341 4362 Page: 27/28 Date: 4/12/2013 2:39:48 PM

Project List:

1. Comparison of Measured vs. Predicted Passive System Performance (1)

The instructor will give students some ideas for locating a passively heated solar residence in the Rolla area. Discuss with the owner his/her interest in having the system's performance analyzed. If interested, the owner should expect to provide students previous year's of utility bills and a set of plans (some of which you will want to copy and return). Compare the actual utility usage with the predictions of the un-utilizability method or an hourly simulation code (SUNCODE or TRNSYS). Students should try to avoid homes which use a significant amount of wood energy for heat since the efficiency of wood heating is nearly impossible to determine.

2. Decathlon Solar House

Principles of passive design have and have not been incorporated in the design of the solar decathlon homes and its surrounding conditions. The task in this project is to research three homes (from other schools) developing simulation models based on their designs and location and determining its effectiveness in employing their passive solar designs.

3. Daylighting (1)

Buildings with large areas of glass are difficult to calculate the benefits in terms of reducing the need for artificial lighting due to improved daylighting. The assignment for this project is to create a simplified method for determining the electricity savings due to daylighting in residences. Assess the suitability of the daylight factor method for this simplified approach (see <u>Solar Design</u>, by Kreider, Hoogendoorn and Kreith, 1990, for an overview in Chapter 10).

4. Passive Cooling (1)

The technologies that work for passive cooling are much less well understood than those for heating. The assignment for this project is to prepare a summary of this technology in a 10- to 15-page report with a full bibliography of quality publications. Students will want to evaluate all resources and reports on the Internet. A person picking up this report should be able to gain an understanding of the approaches that have been demonstrated to work and those that do not. Case studies and data collected on passively cooled buildings should be included.

5. Sustainable Buildings (2)

Sustainable building design is aimed at the energy efficient design of building systems and materials. It is required to assemble a complete data base on the assessment techniques to be used for Life Cycle Analysis of Buildings. A preliminary report on some resources for this study has already been assembled. The student's project is aimed at creating a quantitative tool to assess buildings on a Life Cycle Basis and to collect all data needed. The student will select an example residence and do an LCA study on it.

6. Solar Chimney (2)

One method of enhancing the flow of cooling air through a building in summer is to create a solar heated chimney. This project will not assess the economic but rather will assess the technical feasibility of this concept. The deliverable of the project is a design tool that will require a handful of inputs and will predict the ventilation airflow on a typical sunny summer day. An earlier unsuccessful attempt at this could serve as some background reading.

7. Other Topics

If a student has a topic that he/she wishes to pursue other than the ones listed above, the student may seek approval of the instructor for any topic requiring the analysis or synthesis of passive solar design principles.

From: 573 341 4362 Page: 28/28 Dat

EC# 2462-552013 - MK+ 301

Effective Year: 2013 Effective Term: Summer X Fall Spring

Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved Spring 2009 or later allow the course to be offered twice at any time during the following three year period. After an experimental course has been offered twice, a CC form may be submitted to request a permanent course number.

A new course that is required as part of a degree program, minor, or graduate certificate may be submitted on a CC form to receive a permanent course number.

Co-listed offerings should be submitted on one form, originating from the primary discipline.

Department: Business and Information Technology

Discipline and Course Number: MKT 301

Course Title: (:) Integrated Marketing Communications

Abbreviated Title (24 spaces or less): Integrated MKtg Comm

Instructor(s): Dr. Sarah Stanley

Credit Hours: Lecture 3 Lab 0 Total 3

Prerequisites: At least Junior Standing

Semester(s) previously taught: None

Brief Course Description (360 character spaces or less): Course illustrates the importance of creating synergy within a marketing campaign. Speaking with 'one voice' allows a brand to make a stronger impact; so students will work with a local non-profit to improve their marketing message at each customer touch point. Students will analyze a marketing plan and work to improve it, including brochures, donation lets-

List all co-listed courses: Include initials of Department Chair, if signature is not already included below.

1)

3)

5)

2)

4)

6)

Recommended by Department:

(Chain signature)

Date: 3/ 0/ 63/

Recommended by DSCC:

(Chair signature)

Date: 3/7/20/3

Approved by Curricula Committee:

(Chair signaturo)

Date: <u>4/12/</u>