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Missouri University of Science and Technology

Formerly University of Missouri-Rolla

Agenda Campus Curricula Committee Meeting December 1, 2009 Meeting 3:15 p.m. Room 117 Fulton Hall

Approval of November 6, 2009 minutes.

Review of submitted DC forms:

DC 0340, Environmental Engineering, Bachelor of Science, effective Fall 2010.

DC 0341, Biological Sciences, Bachelor of Arts, effective Spring 2010

DC 0342, Biological Sciences, Bachelor of Arts, Pre-Medicine Emphasis Area, effective Spring 2010.

DC 0343, Biological Sciences, Bachelor of Arts, Secondary Education Emphasis Area, effective Spring 2010.

DC 0344, Biological Sciences, Bachelor of Science, effective Spring 2010.

Review of submitted CC forms:

CC 7845, Electrical Engineering 405, Power System Protection, effective Fall 2010.

CC 7846, Electrical Engineering 404, Economic Operation of Power systems, effective Fall 2010.

CC 7847, Petroleum Engineering 406, Advanced Reservoir Simulation, effective Spring 2010.

CC 7848, Geological Engineering 235, Environmental Geoscience, effective Spring 2010.

CC 7849, Geological Engineering 340, Fld Opr/Ground Water Hyd, effective Spring 2010.

CC 7850, Geological Engineering 349, Comp Appl in Geol Engr, effective Spring 2010.

CC 7851, Geological Engineering 351, Geological Eng Case Hist, effective Spring 2010.

CC 7852, Geological Engineering 415, Advanced Geostatistics, effective Spring 2010.

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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

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- CC 7853, Geological Engineering 438, Rem Eng Uncont Haz Waste, effective Spring 2010.
- CC 7854, Engineering Graphics 212, Computer Aided Drafting, effective Spring 2010.
- CC 7855, Engineering Management 357, Advanced Facilities Planning & Design, effective Spring 2010.
- CC 7858, IST 368, Law and Ethics in E-Commerce, effective Fall 2010.
- CC 7859, Business 110, Management and Organizational Behavior, effective Fall 2010.
- CC 7860, Business 120, Financial Accounting, effective Fall 2010.
- CC 7861, Business 320, Managerial Accounting, effective Fall 2010.
- CC 7862, Business 360, Business Operations, effective Fall 2010.
- CC 7863, Business 380, Strategic Management, effective Fall 2010.
- CC 7864, ERP 246, Introduction to Enterprise Resource Planning, effective Fall 2010.
- CC 7865, Finance 250, Corporate Finance I, effective Fall 2010.
- CC 7866, IST 223, Database Management, effective Fall 2010.
- CC 7867, IST 241, E-Commerce, effective Fall 2010.
- CC 7868, IST 354, Multi-Media Development and Design, effective Fall 2010.
- CC 7870, Engineering Mechanics 324, Engr Plasticity I, effective Spring 2010.
- CC 7871, Engineering Mechanics 424, Engr Plasticity II, effective Spring 2010.
- CC 7872, Aerospace Engineering 321, Aerodynamics Cad Design, effective Spring 2010.
- CC 7873, Aerospace Engineering 341, Exper Stress Analysis I, effective Spring 2010.
- CC 7874, Aerospace Engineering 487, Mechanical Engineering 487, Finite Elem Approx III, effective Spring 2010.

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- CC 7875, Mechanical Engineering 337, Atmospheric Science, effective Spring 2010.
- CC 7876, Mechanical Engineering 341, Experimntl Stress Analysis I, Spring 2010.
- CC 7877, Mechanical Engineering 345, Non-Intrusive Meas Meth, effective Spring 2010.
- CC 7878, Mechanical Engineering 424, Theory of Stability II, effective Spring 2010.
- CC 7879, Biological Sciences 315, Developmental Biology, effective Spring 2010.
- CC 7880, Biological Sciences 345, Comparative Chordate Anatomy, effective Spring 2010.
- CC 7881, Ceramic Engineering 407, Bhvr-Mtls Vi-Mechanical, effective Spring 2010.
- CC 7882, Metallurgical Engineering 351, Min proc II Flo & Hydro, effective Spring 2010.
- CC 7883, Metallurgical Engineering 455, Chemical Metallurgy, effective Spring 2010.
- CC 7884, Civil Engineering 432, Turbince-Opn Chnnel flow, effective Spring 2010.
- CC 7885, Civil Engineering 466, Wastewater Treatment II, effective Spring 2010.
- CC 7886, Civil Engineering 491, Internship, effective Spring 2010.
- CC 7887, Civil Engineering 499, Case Studies in Civ Engr, effective Spring 2010.

Review of submitted EC forms:

- EC 2210, Mining Engineering 401, Geostatistics, effective Spring 2011.
- EC 2211, Petroleum Engineering 301, effective Fall 2010.
- EC 2212, Petroleum Engineering 401, Advanced Well Completion Design, effective Spring 2010.
- EC 2214, Civil Engineering 301, Concrete Pavement Design, effective Spring 2010.
- EC 2215, Civil Engineering 301, Structural Dynamics, effective Spring 2010.
- EC 2216, Civil Engineering 401, Special Concretes, effective Spring 2010.

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EC 2219, Engineering Management 301, New Product Design, effective Spring 2010.

EC 2220, Nuclear Engineering 401, Electrical Engineering 401, effective Spring 2010.

EC 2222, Aerospace Engineering 301, Mechanical Engineering 301, Plasma Physics I, effective Spring 2010.

EC 2223, Biological Sciences 401, Advanced Nanobiotechnology, effective Spring 2010.

EC 2224, Technical Communication 401, Web-Based Communication, effective Spring 2010.

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Date: 10/13/2009 10:35:13 AM

Effective Year: FS 2010 Effective Term: Summer Fall S Spring (Creating or modifying a degree program must be effective for a Fall term)	009-Ferling-coo
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 in Environmental Engineering	,
Department: Civil, Architectural and Environmental Engineeing	
Briefly describe action requested (Attach documentation as appropriate) This change resulted from review of assessment data. Revised curricula and flow attached, no CC forms are required as no changes to classes are involved.	: chart are
Summary of Changes. 1) Add IDE 110, 120 and 150 2) Drop both Free electives to balance hours with IDE 110, 120, and 150 addition and IDE 100 and IDE 140 with IDE 50. Reason: Statics and Dynamics, IDE 110 and IDE 50 (Statites) 4) Add CE 215 as a technical elective. 5) Drop ME 227 towards thermodynamics requirement, now requiring only ChE 1 requirement was ME 227 or ChE 141; no change to total hours. 6) Add ChE 237 as a depth elective.	t task inden a see
Recommended by Department: (Chair signature)	Date: 9/28/09
Recommended by Discipline Specific Curricula Committee: (Chair signature)	Date: 10-19-09
Approved by Curricula Committee:(Chair signature)	Date:
Approved by Faculty Senate:(Chair signature)	Date:

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09/28/09

(Revised 1/31/2008)

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Environmental Engineering Bachelor of Science

Current		Proposed	
FRESHMAN YEAR		FRESHMAN YEAR	
First Semester	Credit	First Semester	Credit
	1	FE 10-Study & Careers in Eng.	1
FE 10-Study & Careers in Eng.	5	Chern 1,2-Gen Chem	5
Chem 1,2-Gen Chem	4	Math 14-Calculus for Engineers I	5 4 3 <u>3</u> 16
Math 14-Calculus for Engineers I	3	English 20-Expos & Argumentation	3
English 20-Expos & Argumentation	<u> </u>	General Education Elective	<u>.3</u>
General Education Electives	16	desired and management of the second	16
	+0		
Canad Competer	Credit	Second Semester	Credit
Second Semester IDE 20-Eng Design w/Cmp Apps	3	IDE 20-Eng Design w/Cmp Apps	3
Math 15-Calculus for Engineers II	4	Math 15-Calculus for Engineers II	4
Math 15-Catculus for Engineers II	4	Phy 23-Engineering Physics I	4
Phy 23-Engineering Physics I General Education Elective	6	General Education Elective.	4 <u>6</u> 17
Gevelai Eddearion electives	<u>_6</u> 17		17
SOPHMORE YEAR	**	SOPHMORE YEAR	
	Credit	First Semester	Credit
First Semester	3	IDE 50-Statics	3
IDE 140 Statics & Dynamics	4	Math 22-Calculus w/Analytic Geo III	4
Math 22-Calculus w/Analytic Geo III	3	EnvE 261-Intro to Env Engr & Sci	3
EnvE 261-Intro to Env Engr & Sci.	3	Chem 3 or Geo 275-Geochemistry	3
Chem 3 or Geo 275-Geochemistry	<u>3</u>	Bio Sc 110-General Biology	3 4 3 3 <u>3</u> 16
Bio Sc 110-General Biology	16	Big GG 1+0 moller at 1-1-1-5/	
Control Competer	Credit	Second Semester	Credit
Second Semester	3	IDE 110 Mechanics of Materials	3
ChE 120-Chem Eng Mat Bal	ž	IDE 120 Materials Testing	. 1
EnvE 262-Env Eng Blo Fund		IDE 150 Dynamics	1 2 3 3
CE 230-Elem Fluid Mecha	3 4 <u>3</u>	ChE 120-Chem Eng Mat Bal	3
Phys 24-Engineering Physics II	3	EnvE 262-Env Eng Blo Fund	3
Math 204-Elem Diff Equations	16	Phys 24-Engineering Physics II	4
	10	111/2 2 1 11/20194111/2 11/71 1-	16
JUNIOR YEAR	Credit	JUNIOR YEAR	
First Semester	3	First Semester	Credit
EnvE 265-Water & Wastewater Eng, EnvE 263-Env Eng Chem Fund	3	EnvE 265-Water & Wastewater Eng.	3
	3	EnvE 263-Env Eng Chem Fund	3
Stat 213-Applied Eng Stat GE 50-Geology for Engineers	3 3	- CE 230-Elem Fluid Mech	3 3 3 3 3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5
Communications Elective	<u>3</u>	Math 204-Elem Diff Equations	_3
Collittititications pieceaes	15	GE 50-Geology for Engineers	_3
Second Semester	Credit		15
EnvE Depth Elective	3	Second Semester	Credit
EnvE 369-Sanitary Design	3	EnvE 369-Sanitary Design	3
CE 234-Hydraulic Eng	4	Stat 213-Applied Eng Stat	3
ChE 141-or ME 227-Thermal Analysis	3 4 3 3	ChE 141 Thermodynamics	3 3 3
General Education Elective:	3	EnvE Technical Elective	3
Policial Education States	16	Communications Elective	<u>3</u>
SENIOR YEAR	+-		15
First Semester	Credit	SENIOR YEAR	
CE 248-Contracts & Construc Eng	3	First Semester	Credit
EnvE 210-Senior Seminars	1	CE 248-Contracts & Construc Eng	3
EnvE Air Pollution Elective	3	EnvE 210-Senior Seminar:	1
EnvE Technical Electives.	3	CE 234-Hydraulic Eng	4
Hist 270-History of Technology	3	EnvE Air Pollution Elective	3
Free Elective.	_ 2	Hist 270-History of Technology	3
	16	EnvE Depth Elective.	_3
Second Semester	Credit		16
EnvE 298-CE Design Projects	3	Second Semester	Credit
EnvE Depth Elective	3	EnvE 298-CE Design Projects	3
EnvE Depth Elective.	3	EnvE Depth Elective	3
EnvE Technical Electives.	3	EnvE Depth Elective.	3
EnvE 269-Research in Env Eng	1	EnvE Technical Elective.	3
Free Elective	. 3	EnvE 269-Research in Env Eng	<u>1</u> 3
 	3 <u>1</u> 2 16	General Education Elective	3
			16

In red: IDE 140 is dropped and replaced with IDE 50, 110, 120, and 150. The six added hours are balanced by free electives.

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Effective Year: 2010 Effective Term: Summer Fall Spring (Creating or modifying a degree program must be effective for a Fall term)	2009-BivSci- <i>0</i> 00-
Degree Change Form (DC)	
This form is to be used for creating or modifying degree programs, emphasis an	eas, and minors.
Title of degree program, emphasis area, or minor: Bachelor of Arts, Biological Sciences	
Department: Biological Sciences	
Briefly describe action requested (Attach documentation as appropriation are updating our curriculum to reflect the change in credit hours for organ that are required for our students. These classes (Chem 221 and Chem 223) from 3 to 4 credit hours each.	recently changed
We are also including another option for the Computer Science/Statistics required degree. We now give students the option to take Comp Sci 074 and 078 rathe 053.	-, -,
Finally, we are editing the last section of the degree requirements to state (menough electives are required to obtain a total of 120 credit hours. This is a continuous that it is a continuous that it is a continuous that it is a continuous total of the simpler), rather than a real change in requirements	ore generally) that change in wording (to
Please note the minor changes (in red) on the following page.	
Recommended by Department: (Chair signature)	Date: 10/11/09
Recommended by: Discipline Specific Curricula Committee (Chair signature)	Date: 16/3/2409
Approved by Curricula Committee: (Chair signature)	Date:
Approved by Faculty Senate:(Chair signature)	Date:

(Revised 1/31/2008)

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From: 573 341 4362 Page: 2/15 Date: 10/23/2009 11:13:58 AM

Bachelor of Arts Biological Sciences Degree Requirements

Specific requirements for the B.A. degree in biological sciences include a minimum of 120 semester hours of credit, including 30 hours of biology core courses.

Core Courses Credit Bio Sc 102-Intro to Bio Sc
Chemistry Chem 1,2,3, & 4-General Chem
Mathematics & Physical Science Various courses in mathematics, physics, and/or geology chosen in consultation with academic adviser. (Note: Proficiency in College Algebra must be demonstrated by a grade of "C" or better in a College Algebra course or by examination9
Computer Science/Statistics (One of the following) Cmp Sc 053 or 074/078
General Requirements for BA English Composition (English 20 and one additional composition course)
Elective credits: In consultation with his or her advisor, each student will elect sufficient additional

courses to complete a minimum of 120 credit hours.

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Date: 11/13/2009 10:46:16 AM

Date: 10/23/2009 11:13:58 AM

Bachelor of Arts Biological Sciences Degree Requirements old version

Specific requirements for the B.A. degree in biological sciences include a minimum of 120 semester hours of credit, including 30 hours of biology core courses.

From: 573 341 4362

Core Courses Credit Bio Sc 102-Intro to Bio Sc	
Chemistry Chem 1,2,3, & 4-General Chem	
Mathematics & Physical Science Various courses in mathematics, physics, and/or geology chosen in consultation with academic adviser. (Note: Proficiency in College Algebra must be demonstrated by a grade of "C" or better in a College Algebra course or by examination	
Computer Science/Statistics (One of the following) Cmp Sc 053-Intro to Prog	
General Requirements for BA English Composition (English 20 and one additional composition course)	

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Date: 10/23/2009 11:13:59 AM

Effective Year: 2010 Effective Term: Summer [] Fall [] Spring [X] (Creating or modifying a degree program must be effective for a Fall :	nc # 0342-2009-BioSci- <i>000-00</i> term)
	4 m

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 Arts, Pre-Medicine Emphasis Area, Biological Sciences

Department: Biological Sciences

Briefly describe action requested (Attach documentation as appropriate): We are updating our curriculum to reflect the change in credit hours for organic chemistry classes that are required for our students. These classes (Chem 221 and Chem 223) recently changed from 3 to 4 credit hours each. Please note the minor changes (in red) on the following page.

Recommended by Department:	(Chair signature)	Date: plulot
Recommended by:	(Chair signature)	Date:
Approved by Curricula Committee:	(Chair signature)	Date:
Approved by Faculty Senate:	(Chair signature)	Date:

10/08/09

(Revised 1/31/2008)

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Date: 11/13/2009 10:46:16 AM

Date: 10/23/2009 11:13:59 AM

Bachelor of Arts Biological Sciences Pre-Medicine Emphasis Area Degree Requirements

The student will fulfill the requirements for a Bachelor of Arts in Biological Sciences as outlined above. The following classes are also required: Chem 226 & 228 (Org Chem labs), 2 semester of College (General) Physics and labs (Phy 31 (21), 22, 35 (25), 26), courses in Human Anatomy (Bio Sc 241), Human Physiology and Lab (Bio Sc 242/243) and Biochemistry (Chem 361) are highly recommended.

NOTE: No changes to catalog entry, but CAPS report should reflect changes to B.A. curriculum (see next page), which is being amended with a different DC form.

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Date: 11/13/2009 10:46:17 AM

Bachelor of Arts Biological Sciences Degree Requirements

Specific requirements for the B.A. degree in biological sciences include a minimum of 120 semester hours of credit, including 30 hours of biology core

From: 573 341 4362

Core Courses Credit Bio Sc 102-Intro to Bio Sc
Chemistry Chem 1,2,3, & 4-General Chem
Mathematics & Physical Science Various courses in mathematics, physics, and/or geology chosen in consultation with academic adviser. (Note: Proficiency in College Algebra must be demonstrated by a grade of "C" or better in a College Algebra course or by examination
Computer Science/Statistics (One of the following) Cmp Sc 053 or 074/078
General Requirements for BA English Composition (English 20 and one additional composition course)
Elective credits: In consultation with his or her advisor, each student will elect sufficient additional

courses to complete a minimum of 120 credit hours.

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Date: 10/23/2009 11:14:00 AM

Effective Year: 2010 Effective Term: Summer Fall Spring (Creating or modifying a degree program must be effective for a Fall term)	0343-2009-BioSci-000-00
Degree Change Form (DC)
This form is to be used for creating or modifying degree programs, er	mphasis areas, and minors.
Title of degree program, emphasis area, or minor: Bachelor of Arts, Secondary Education Emphasis Area, Biological Scie	ences
Department: Biological Sciences	
Briefly describe action requested (Attach documentation as a we are updating our curriculum to reflect the change in credit hours that are required for our students. These classes (Chem 221 and Chem 3 to 4 credit hours each. Please note the minor changes (in recommon changes).	em 223) recently changed
Recommended by Department: (Chair signature)	Date: (8)11 09

Approved by Faculty Senate: _______ Date: _______ Date: ______

(Chair signature)

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10/08/09

Approved by Curricula Committee:__

(Revised 1/31/2008)

Date: 11/3/2009

Date: ___

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Bachelor of Arts Biological Sciences Secondary Education Emphasis Area Degree Requirements

A degree in this emphasis area requires 137 credit hours. The required courses are provided below. A minimum grade of "C" is required by the department in all mathematics and statistics courses counted toward this degree.

Humanities: 21 semoster hours

English 20 (3 hours), English 60 or 160 (3 hours), Speech 85 (3 hours), at least one course in each of: Literature and Philosophy and 2 courses in Fine arts

Social Sciences: 15 semester hours

History 111 (3 hours), History 112 (3 hours), History 175 or 176 (3 hours), Political Science 90 (3 hours), Psychology 50 (3 hours)

Mathematics/Physical Science: 9 semester hours At least one course in Math and Physics or Geology, proven proficiency at college algebra

Computer Science/Statistics: 3 semester hours

3 semester hours of Computer Science or Statistics

Chemistry: 17 semester hours Chemistry 1, 2, 3, and 4 (9 hours), Chemistry 221, 223 (8 hours)

Biological Sciences: 30 semester hours

28 semester hours of required core coursework, Bio Sc 102 (1 hour), Bio Sc 111/112 (5 hours), Bio Sci 113/114 (4 hours), Bio Sc 211/212 (4 hours), Bio Sc 218 (3 hours), Bio Sc 231 (3 hours), Bio Sc 251 (3 hours), History 275 (3 hours), Bio Sc 310 (1 hour), 3 semester hours of advanced biology elective coursework

Education: 42 semester hours

Educ 40 (2 hours), Educ 104 (2 hours), Educ 164 (2 hours), Educ 174 (2 hours), Educ 216 (3 hours), Educ 251 (3 hours), Educ 280 (6 hours), Educ 298 (1 hour), Educ 299 (12 hours), Psychology 155 (3 hours), Psychology 208 (3 hours), Psychology 354 (3 hours)

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Bachelor of Arts Biological Sciences Secondary Education Emphasis Area Degree Requirements

A degree in this emphasis area requires 135 credit hours. The required courses are provided below. A minimum grade of "C" is required by the department in all mathematics and statistics courses counted toward this degree.

Humanities: 21 semester hours

English 20 (3 hours), English 60 or 160 (3 hours), Speech 85 (3 hours), at least one course in each of: Literature and Philosophy and 2 courses in Fine arts

Social Sciences: 15 semester hours History 111 (3 hours), History 112 (3 hours), History 175 or 176 (3 hours), Political Science 90 (3 hours),

Psychology 50 (3 hours)

Mathematics/Physical Science: 9 semester hours At least one course in Math and Physics or Geology, proven proficiency at college algebra

Computer Science/Statistics: 3 semester hours 3 semester hours of Computer Science or Statistics

Chemistry: 15 semester hours

Chemistry: 16 semester nours Chemistry 1, 2, 3, and 4 (9 hours), Chemistry 221, 223 (6 hours)

Biological Sciences: 30 semester hours

28 semester hours of required core coursework, Bio Sc 102 (1 hour), Bio Sc 111/112 (5 hours), Bio Sci 113/114 (4 hours), Bio Sc 211/212 (4 hours), Bio Sc 218 (3 hours), Bio Sc 231 (3 hours), Bio Sc 251 (3 hours), History 275 (3 hours), Bio Sc 310 (1 hour), 3 semester hours of advanced biology elective coursework

Education: 42 semester hours

Educ 40 (2 hours), Educ 104 (2 hours), Educ 164 (2 hours), Educ 174 (2 hours), Educ 216 (3 hours), Educ 251 (3 hours), Educ 280 (6 hours), Educ 298 (1 hour), Educ 299 (12 hours), Psychology 155 (3 hours), Psychology 208 (3 hours), Psychology 354 (3 hours)

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Date: 10/23/2009 11:14:01 AM

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Effective Year: 2010 Effective Term: Summer Fall Sp Creating or modifying a degree program must (ring 区 be effective for a Fall t		2009-BioSci- <i>o</i> z
	nange Forr		
This form is to be used for creating or m	odifying degree progra	ms, emphasis areas	, and minors.
Title of degree program, emphasis are Bachelor of Science, Biological Sciences	a, or minor:		
Department: Biological Sciences			
Briefly describe action requested (Atta We are updating our curriculum to reflect t that are required for our students. These of from 3 to 4 credit hours each. Please note	ne change in credit : classes (Chem 221 a	nours for organic (and Chem 223) rec	ently changed
We are also amending the number of adva 20. This corrects an error and inconsisten	inced biology credit in cy between the catal	nours that are required and CAPS repo	uired from 22 to orts.
Recommended by Department:	(Chair signature)		Date: 10/11/09
Recommended by: Discipline Specific Curricula Committee	(Chair signature)		Date: 11/3/2009
Approved by Curricula Committee:	(Chair signature)		Date:
Approved by Faculty Senate:	(Chair signature)	<u>. </u>	Date:

(Revised 1/31/2008)

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Bachelor of Science Biological Sciences Degree Requirements

A minimum of 130 credit hours is required for a Bachelor of Science degree in Biological Science and an average of at least two grade points per credit hour must be obtained. These requirements for the B.S. degree are in addition to credit received for basic ROTC. The Biological Science B.S. degree must include 46 semester hours of biological sciences course work, to include:

Bio Sc 102-Intro to Bio Sc
Ria Sc 114-Riadiversity Lab
Bio Sc 211-Cellular Biology
Bio Sc 221-Microbiology
Bio Sc 222-Microbiology Lab
Bio Sc 251-Ecology
Bio Sc 310-Seminar
Advanced biological sciences or approved course work in other departments for a total of 46 credit hours of biology-related classes
22 semester hours of chemistry to include: Chem 1,2,3, & 4 (General chemistry)
2 semesters of College (General) Physics and labs Phys 31 (21), 22, 35 (25), 26 8 (10)
The Math/Statistics requirement will be a minimum

The Math/Statistics requirement will be a minimum of 10 credit hours with a requirement for Math 8 or Math 14.

9 semesters hours of social sciences, (to include Hist 112 or 175 or 176 or Pol Sc 90, or equivalent 9

Elective credits: In consultation with his or her advisor, each student will elect sufficient additional courses to complete a minimum of 130 credit hours. A minimum grade of "C" is required for each Biological Science course used to fulfill the B.S. degree requirements.

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Bachelor of Science Biological Sciences Degree Requirements

Degree Requirements

A minimum of 130 credit hours is required for a Bachelor of Science degree in Biological Science and an average of at least two grade points per credit hour

must be obtained. These requirements for the B.S. degree are in addition to credit received for basic ROTC. The Biological Science B.S. degree must include 46 semester hours of biological sciences course work, to include:

2 semesters of College (General) Physics and labs Phys 31 (21), 22, 35 (25), 268......(10) The Math/Statistics requirement will be a minimum of 10 credit hours with a requirement for Math 8 or Math 14.

9 semesters hours of social sciences, (to include Hist 112 or 175 or 176 or Pol Sc 90, or equivalent 9

Elective credits: In consultation with his or her advisor, each student will elect sufficient additional courses to complete a minimum of 130 credit hours. A minimum grade of "C" is required for each Biological Science course used to fulfill the B.S. degree requirements.

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New Course		<u> </u>	Credit Ho	ours 🗀	Prerequisi	tes 🗆
Course Title		escription 🛭	, ,	lumber 🗆	Co-listing	
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	ent: Electrical & C	·	•		-	
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3. Course Tit				- · · · •		
	Proposedi sei	•				
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	methods for high protection, circuit synchronizing, loa	voltage tran : breaker inte	smission system erruption charact	s. Pilot wire,	power line ca	irrier apparatus, bu:
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8. Required fo	or Majors: 🔲 👢	Elective for M	ajors: 🗵			
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Recommende	by Department .	Hel	(Chair signature)	Α Δ		Date: 10-19-09
Recommende	d by Discipline Spe	cific Curricul	Chair signature	M R HAMA	<u> </u>)ate: 10-19-09
Approved by (Lumcula Committe	:e:	Chair signature)		F	Date:
Approved by F	aculty Senate:		Chair signature)	. -	<u></u> [Date:
09/28/09			-		.d=1. Lu=.H	(Revised 1/31/08)

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Date: 11/13/2009 10:46:19 AM

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Elec Eng 405 Power System Protection

Old Catalog Description:

Protective relaying incorporating electromechanical, solid state and modern computer relaying methods for high voltage transmission systems. Pilot wire, power line carrier apparatus, bus protection, circuit breaker interruption characteristics, out of step relaying, reclosing, synchronizing, load and frequency relaying.

New Catalog Description:

Protective relaying incorporating electromechanical, solid state and computer relaying methods for high voltage transmission systems; instrument transformers; generator, transformer, line and bus protection; effect of system grounding; pilot protection and out of step relaying principles.

Prerequisite: No change

Reason for change: The new description correctly reflects the contents of the course.

Effective: Fall 2011

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Date: 11/13/2009 10:46:20 AM

Date: 10/13/2009 10:35:14 AM

CC File #1846-2009-05-404-33 Effective Year: 2010 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 (1-9 Must Be Completed. Leave "Proposed" Items blank if no change is being made.) Department: Electrical & Computer Engineering 2. Discipline and Course Number: Present: EE 404 Proposed: 3. Course Title: Present: Economic Operation of Power Systems Proposed: Power System Operations Abbreviated Course Title: Power System Operations (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Present: Optimum economic loading of thermal plants determined by the method of Lagrange multipliers, derivation of the system loss matrix & its transformation to the most useful basis, practical evaluation of the matrix elements, extension of optimum loading criteria to include system losses, effect of hydro plants on system economics. Proposed: Optimal dispatch operations, economic loading of power plants, mathematical optimization, locational marginal pricing, optimal power flow; effect of hydro and wind power plants on system economics; contingency analysis and system security, state estimation. 5. If course requires field trip check box: 🔲 Lab: 0 Total: 3 6. Credit Hours: Present: Lecture: 3 Proposed: Lecture: Lab: Total: 7. Prerequisites: Present: EE 307 Proposed: 8. Required for Majors: Elective for Majors: 🛛 9. Justification: The new title correctly reflects the contents of the course. 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) 4) Recommended by Department (Chair signature) Recommended by Discipline Specific Curricula Committee (Chair signature) Approved by Curricula Committee: Date: _ (Chair signature) Date: Approved by Faculty Senate: (Chair signature) (Revised 1/31/08) 09/25/09

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4362 Page: 22/42 Date: 11/13/2009 10:46:20 AM

Elec Eng 404

Old Title: Economic Operation of Power Systems

New Title: Power System Operations

Old Catalog Description:

Optimum economic loading of thermal plants determined by the method of Lagrange multipliers, derivation of the system loss matrix and its transformation to the most useful basis, practical evaluation of the matrix elements, extension of optimum loading criteria to include system losses, effect of hydro plants on system economics.

1

New Catalog Description:

Optimal dispatch operations, economic loading of power plants, mathematical optimization, locational marginal pricing, optimal power flow; effect of hydro and wind power plants on system economics; contingency analysis and system security, state estimation.

Prerequisite: No change

Reason for change: The new title correctly reflects the contents of the course.

Effective: Fall 2010

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Date: 11/13/2009 10:46:21 AM

Date: 10/13/2009 10:35:14 AM Page: 5/22 From: 573 341 4362 ·CC File # 7847-2009-PE-4010-3 Effective Year: 2010 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 Ca-listing 🔲 Course Number 🖾 Catalog Description 🗔 Course Title 🗌 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Geol Sci and Engineering Proposed: Pet Eng 408 2. Discipline and Course Number: Present: Pet Eng 406 Present: Advanced Reservoir Simulation 3. Course Title: Proposed: Abbreviated Course Title: Adv Reservoir Sim (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) Advanced techniques in reservoir simulation. Present: Proposed: 5. If course requires field trip check box: 🔲 Total: 3 Lab: Present: Lecture: 3 6. Credit Hours: Lebi Total: Lecture: Proposed: 7. Prerequisites: Present: Petr 308 Proposed: Elective for Majors: 🗵 8. Required for Majors: Achieve consistency with numbers. Petr 308 is the first reservoir simulation course, 9. Justification: we want to use Petr 408 as the second course. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): N/A 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 2) I) 4) 5) 6)

Date:

Approved by Curricula Committee: (Chair signature)

Recommended by Discipline Specific Curricula Committee

Date: _\ 0-\

Approved by Faculty Senate:,

Recommended by Department (22)

Date:

(Chair signature)

(Chair signature)

(Chair signature)

From: 573 341 4362

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Page: 6/22

Date: 11/13/2009 10:46:21 AM

Date: 10/13/2009 10:35:15 AM

*cc file #7848-2009-GE-235-2/ Effective Year: 2010 Fall 🔲 Spring 🗵 Effective 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 🔲 Course Title 🗌 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Geological Science and Engineering 2. Discipline and Course Number: Present: Geo Eng 235 Proposed: 3. Course Title: Present: Environmental Geoscience Proposed: Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Presents Proposed: 5. If course requires field trip check box: 🔲 Total: Labi 6. Credit Hours: Present: Lecture: Total: Lab: Proposed: Lecture: 7. Prereguisites: Present: Proposed: Elective for Majors: 🗀 8. Required for Majors: 🔲 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) 5) 4) Recommended by Department Date: 1049-09 Recommended by Discipline Specific Curricula Committee (Chair signature) Data: Approved by Curricula Committee: (Chair signature) Date: . and hy Faculty Senate: (Revised 1/31/06) (Chair signature) This fax was received by GFI FAXmaker fax server. For more information, visit: http://www.gfi.com

From: 573 341 4362 Page: 25/42 Date: 11/13/2009 10:46:21 AM

From: 573 341 4362 Page: 7/22 Date: 10/13/2009 10:35:15 AM

'cc file # 7849-2009-GE-340-2 Effective Year: 2010 Spring 🗵 Effective Term: Summer \Box Fall 🖂 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 🖂 Co-listing 🔲 Course Number Catalog Description 🗌 Course Title 🗌 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Geological Science and Engineering Proposed: 2. Discipline and Course Number: Present : Geo Eng 340 Present: Fid Opr/Ground Water Hyd 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) Present: Proposed: 5. If course requires field trip check box: \Box Total: Lab: Present: Lecture: 6. Credit Hours: Total: Labi Proposed: Lecture: 7. Prerequisites: Present: Proposed: Elective for Majors: 🔲 8. Required for Majors: 🗌 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) 5) 4) Recommended by Department Date: 10-1 Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: _ (Chair signature) Date: . Approved by Faculty Senate: (Chair signature) (Revised 1/31/08) This fax was received by GFI FAXmaker fax server. For more information, visit: http://www.gfi.com

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Date: 11/13/2009 10:46:22 AM

Date: 10/13/2009 10:35:15 AM Page: 8/22 From: 573 341 4362 cc File # 7850-2009-6E-349-21 Effective Year: 2010 Spring 🗵 Effective Term: Summer 🗆 Fall 🔲 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prereguisites 🛄 Credit Hours 🔲 Course Deletion 🖾 New Course 🗆 Co-listing Course Number 🗔 Catalog Description 🗌 Course Title 🗌 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Geological Science and Engineering 2. Discipline and Course Number: Present : Geo Eng 349 Proposed: 3. Course Title: Present: Comp Appl in Geol Engr Proposed: Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Present: Proposed: 5. If course requires field trip check box: \Box Total: Lab: Lecture: Present: 6. Credit Hours: Total: Lab: Lecture: Proposed: 7. Prerequisites: Present: Proposed: Elective for Majors: 🔲 8. Required for Majors: 🔲 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) Z) 1) 5) 4) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: . (Chair signature) Date: . Approved by Faculty Senate: _ (Chair signature) (Revised 1/31/08) This fax was received by GFI FAXmaker fax server. For more information, visit: http://www.gfi.com

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Date: 11/13/2009 10:46:22 AM

Date: 10/13/2009 10:35:16 AM

From: 573 341 4362 Page: 9/22 cc FIIO # 7851-2009-6E-351-2 Effective Year: 2010 Spring 🖾 Fall 🔲 Effective Term: Summer 🔲 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prerequisités 🗔 Credit Hours Course Deletion 🛭 New Course 🛄 Co-listing 🗆 Course Number Catalog Description 🗆 Course Title 🔲 Course Information (1-9 Must Be Completed. Leave "Proposed" Items blank if no change is being made.) 1. Department: Geological Science and Engineering 2. Discipline and Course Number: Present: Geo Eng 351 Proposed: Present: Geological Eng Case Hist 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) Present **Proposed**: 5. If course requires field trip check box: 🗍 Totali Lab: Lecture: Present: 6. Credit Hours: Total: Lab: Lecture: Proposed: 7. Prerequisites: Present: Proposed: Elective for Majors: 🗔 8. Required for Majors: 🔲 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) 5) 4) Recommended by Department R2 Date: 10-19-09 Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: . (Chair signature) Date: Approved by Faculty Senate: (Chair signature)

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Date: 11/13/2009 10:46:22 AM

Date: 10/13/2009 10:35:16 AM

From: 573 341 4362 cc File # 7852-2009-6E-415-2 Effective Year: 2010 Effective Term: Summer Fall 🔲 Spring 🛛 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 Course Title 🗀 Catalog Description 🔲 Course Information (1-9 Must Be Completed. Leave "Proposed" Items blank if no change is being made.) 1. Department: Geological Science and Engineering 2. Discipline and Course Number: Present: Geo Eng 415 Proposed: 3. Course Title: Present: Advanced Geostatistics Proposed: Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Present: Proposed: 5. If course requires field trip check box: 🗆 Total: Labi Lecture: 6. Credit Hours: Present: Total: Lab: Locture: Proposed: 7. Prerequisites: Present: Proposed: S. Required for Majors: 🔲 Elective for Majors: 🔲 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dopt. Chair, if signature does not appear below. 1) 5) 4) Recommended by Department Date: 10-19-09 Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: _ (Chair signature) Date: Approved by Faculty Senate: _ (Chair signature)

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Date: 11/13/2009 10:46:23 AM

Date: 10/13/2009 10:35:16 AM Page: 11/22 From: 573 341 4362 cc #11e # 7853-2009-6E-438-2 Effective Year: 2010 Spring 🗵 Fall 🔲 Effective 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 🔲 Course Title 🔲 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Geological Science and Engineering 2. Discipline and Course Number: Present : Geo Eng 438 Proposed: Present: Rem Eng Uncont Haz Waste 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) Present: Proposed: 5. If course requires field trip check box: Total: Labi Lecture: Present: 6. Credit Hours: Total: Labi Lecture: Proposed: 7. Prerequisites: Present: Proposed: Elective for Majors: 🔲 8. Required for Majors: \Box This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below. 3) I) 4) Recommended by Department Date: 10-19-09 Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: . (Chair signature) Date: . Approved by Faculty Senate: (Chair signature)

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From: 573 341 4362 Page: 30/42 Date: 11/13/2009 10:46:23 AM

From: 573 341 4362

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Date: 10/13/2009 10:35:17 AM

	From: 573 341	4362 Page: 12/22	Date: 10/13/2008	10,35.17 AW	A A
ffective Year: 20 ffective Term: Sur	010 nmer) Spring 🛭	CC File #	*7854-2009-	Engl=r-212-21
	Cour	se Change	Form (CC)	
	This form is	for creating or modify	ing permanent	courses.	
ourse Changes		s.)	_		
lew Course 🗆	Course Deletion	⊠ Credit	Hours 🗆	Prerequisites 🗔	
muses Title	Catalog Descrip	tion 🗌 Course	Number 🗆	Co-listing 🗆	4 . 5
ourse Informat	tion (1-9 Must Be	Completed. Leave "Pro	posed" Items bla	ink if no change is bei	ig made.)
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. Discipline and (Course Number:	Present : Eng Gr 2	12 Prop	josed i	
. Course Title: P	resent: Comput: roposed:	er Alded Drafting			
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9, Justification:	teach it in the nea	ir future.		,	
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		everimentsi (Al)	ree /101. 201.	301, 401);	
10. Semesters pre	viously offered at	s an experimental cou d by Dept. Chair, if si	enature does II	ot appear below.	
	courses, initiale ع (2		3)		
1)	-/	/	-		,
4)	5)	111/1 //	(7 3 6)		alzula
Recommended by	Decartment	1/1/1 as w 1		Date:	712415
Vermillelines sa		(Chair signature	:)	4	\n \ q_0 9
Recommended by	Discipline Specific	: Curricula Committee	Ferry K H	nylm Date:	10-11-01
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Approved by Curri	cula Committee: .	(Chair signature		Date:	
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Approved by Facul		(Chair signatur		Date	:

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From: 573 341 4362 Page: 31/42 Date: 11/13/2009 10:46:23 AM

From: 573 341 4362 Page: 13/22 Date: 10/13/2009 10:35:17 AM

				-	1855-2009-Emgt-357-3
Effective Yo Torm: Summ	ar: 2010 Ior 🔲 🛮 Fall	☐ Spring 🖾		CC File #	11000 -0007-15mg -357-2
		Course	Change	Form (C	C)
Course Chr			reating or modify	ing permanent	courses.
New Course [k all changes.)	Credit	Hours 🕅	Praraquisitas 🗔
new course : Course Title [log Description		Number 🗆	
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		nt and Systems		•	
			resent : ENG MGT	357 Prop e	orad:
2, Ølskipinis 2 Caussa Titl	e: Dretenb	Advanced Fa	cilities Planning i		
5' FAR158 11H	Propose				
	scription (30	ces or Less. Onl <i>o Character Spac</i>	ly needed for Nev es ar Less.)		
Present:	Development of advanced materials has simulation :	nt of an integral I techniques and andling system modeling, CAD s	ted approach to t d tools for facility design, work plac system	e design; e.g. l	l design of facilities; examination allocation, facility layout nathematical programming,
Proposed:	حدده اسطوسه	へんべ せんれいむ ザカミザラバ	ciliyy incation, spa	ice anocauch, i	les; examination of advanced acility layout materials handling amming and simulation modeling,
5. If course r	equires field	trip check box:			
6. Credit Hou	175	Present:	Lecture: 1.0	Lab: 2.0	Total; 3.0
7. Prerequisi Present	tes: ENG MG1	Proposed: 257 or instruc	Locture: 2.0 tor's permission	Lab: 1.0	Total: \$.0
Proposa	d:				
8. Required f 9. Justificatio	n: Update	Elective for catalog descrip reflect actual p	or Majors: 🛚 Ition to 300 chara practice.	cters or less. (Change lab from 2 hours to 1
10. Semeste	rs previously	offered as an e	oxperimental coul Dept. Chair, if sig	se (101, 201, 3 nature does no	(01, 401): t appear below.
1) 1)	2)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	3)		
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4)	5)		(1)		- Andas
Recommende	ed by Departi	ment	1 mg/		Date 7/30/05
Recommend	ed by Discipii	ne Specific F uri	(Chaipaignathre ricula Committee (Chair signathre)	Juny Apay	Date: 10-19-09
Approved by	Curricula Co	mmittee:	(Chair signature)	<u> </u>	Date:
Approved by	Faculty Sena	ite:	(Chair signature)	<u> </u>	Date:

(Revised 1/29/09)

From: 573 341 4362 Page: 32/42 Date: 11/13/2009 10:46:24 AM

Effective Year Term: Summo		⊠ Spring 🗌		CC File #	# 7858-2009-:	(ST-368-32
	Т	Course C	Change Formating or modifying	orm (CC) courses.	
Course Cha	nges (Chec	ck all changes.)				_
New Course [Cour	se Deletion 🗌	Credit Ho	urs 🔲	Prerequisi	
Course Title		log Description 🔲	Course N		Co-listing	
Course Info	ormation (1-9 Must Be Comple	ted. Leave "Propos	sed" items bla	ank if no change	e is being made.)
1. Departme						
		e Number: Pres	ent : IST 368	Prop	oosed:	
3. Course Title						
3. Course Titl	Propose					
Abbreviat	ed Course	Title:				
	(24 Spa	ces or Less. Only r	needed for New C	ourses or Ti	itle Changes.)	
4, Catalog De Present:	Provides the	t computer profess	k to analyze the dionals regarding	the compute	erization of so	sues that arise for ciety. Topics include onal responsibility.
Proposed:						
5. If course re		trip check box:	Lecture: 3.0	Lab:	Total:	
o. o.cair man		Proposed:	Lecture:	Lab:	Total:	
7. Prerequisit Present:		o level Philosophy	course			
Propose	d: none					
8. Required f 9. Justification] Elective for I uisite change base		ent of the c	ourse and inst	ructor feedback.
		y offered as an exp ses, initialed by De				ow.
4)	5)	1	6)	,		1 1
Recommende	ed by Depart	ment <u>Caro</u>	line Just	<u></u>	<i>.</i> .	Date: 10/16/09 Date: 11/4/09
	•	ine Specific Curric	(Chair signature) ula Committee 🛭 🛭	Com Tolado	Solut-	Date: 10/4/09
		mmittee:	(Chair signature)	/		Date:
• •			(Chair signature)			- '
Approved by	Faculty Sen	ate:	/ Clarify of the series		-	Date:
			(Chail Signature)			

From: 573 341 4362 Page: 33/42 Date: 11/13/2009 10:46:24 AM

ffective Yea ferm: Summo		⊠ Spring 🗆		CC File #	† 7 859-2009-1	3U\$-110-32
		Course (Change F	orm (G	CC) courses.	
Course Cha		ck all changes.)	, ,	- '		
New Course		rse Deletion 🗌	Credit Ho	yrs 🗌	Prerequisi	tes 🛚
Course Title	ી Cata	log Description 🗵	Course N		Co-listing	
Course Info	- ormation ((1-9 Must Be Compl	eted. Leave "Propo	sed" items bla	ank if no change	₃ is being made.)
		s & Info Tech				
		e Number: Pre	sent : BUS 110	Prop	osed:	
3. Course Title			ınd Organizationa	l Behavior		
	Propose					
	ed Course (24 Spa	Title: aces or Less. Only 30 Character Spaces	needed for New (or Less.)	Courses or Ti	tle Changes.)	
Present:	The course	nrovides coverad	e of classic and cu viduals and groups	s in an orgar	jizationai setti	ples, as well as the ing. Topics include
Proposed:	حصالح منتح	jors an awareness bal environment;	s of what function:	s and challei	idez ale lacer	nt and organization to I by managers in ations, and resources
5. If course r	equires field	l trip check box: 🛭	ב			
6. Credit Hou	rs:	Present:	Lecture: 3.0	Lab:	Total:	
7. Prerequisit Present:		Proposed:	Lecture:	Lab:	Total:	
Propose	d: none					
8. Required f 9. Justificatio	on: Update	Elective for ed description and structor feedback.	l prerequisite char	nge based or	n current cont	ent of the course
		y offered as an ex ses, initialed by D				ow.
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4)	5)	7	6)	0		
Recommende	ed by Depar	tment <u>(aa</u>	(Chair signature)	1 7/	700	Date: 10/16/04
Recommende	ed by Discip	line Specific Curri	cula Committee 4 (Chair signature)	<u>Teny Liber</u>	fut	Date: ///4/09
Approved by	Curricula Co	ommittee:	(Chair signature)		<u></u>	Date:
Approved by	Faculty Ser	nate:	(Chair signature) (Chair signature)			Date:
			(cuan signature)			

From: 573 341 4362 Page: 34/42 Date: 11/13/2009 10:46:24 AM

CC File # 7860-2009-BUS-120-32 Effective Year: 2010 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.) 1. Department: Business & Info Tech 2. Discipline and Course Number: Present: BUS 120 Proposed: Present: Financial Accounting 3. Course Title: Proposed: Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) This course is an introduction to financial accounting and its significant role in making sound Present: business decisions. Emphasis is on what accounting information is, why it is important, and how it is used to make strategic economic decisions. Proposed: 5. If course requires field trip check box: \Box Total: Lab: Lecture: 3.0 Present: 6. Credit Hours: Total: Lab: Proposed: Lecture: 7. Prerequisites: Present: Math 4 Proposed: none Elective for Majors: 🔲 8. Required for Majors: 🛛 Prerequisite change based on current content of the course and instructor 9. Justification: feedback. 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) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: ____ Approved by Curricula Committee: ____ (Chair signature) Date: ____ Approved by Faculty Senate: _____ (Chair signature)

From: 573 341 4362 Page: 35/42 Date: 11/13/2009 10:46:25 AM

Course Change Form (CC) This form is for creating or modifying permanent courses Course Changes (Check all changes.) New Course Course Deletion Credit Hours Course Prese	
December 1	
Course Title Catalog Description Course Number Co-li	equisites 🛭 sting 🗍
Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no	change is being made.)
1. Department: Business & Info Tech	
2. Discipline and Course Number: Present : BUS 320 Proposed:	
3. Course Title: Present: Managerial Accounting	
Proposed: Abbreviated Course Title:	
(24 Spaces or Less. Only needed for New Courses or Title Chan 4. Catalog Description (300 Character Spaces or Less.)	
Present: Emphasizes inernal use of accounting information in establishing please controlling operations, and making decisions involved with manage determination of costs relevant to a specific purpose such as inventourent operation, or specific purpose such as inventourent operation.	ment of an enterprise (the
Proposed:	
5. If course requires field trip check box: 6. Credit Hours: Present: Lecture: 3.0 Lab: Total Proposed: Lecture: Lab: Total 7. Prerequisites: Present: BUS 120	
Proposed: BUS 120 or Eng Mgt 130 or Eng Mgt 131 or Eng Mgt 230 8. Required for Majors: ☐ Elective for Majors: ☐	
9. Justification: Prerequisite change based on current content of the course an	d instructor feedback.
 10. Semesters previously offered as an experimental course (101, 201, 301, 40; 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appea 1) 2) 3) 	
4) 5) 6)	,
Recommended by Department	Date: 10/16/69
(Chair signature) Recommended by Discipline Specific Curricula Committee	Date: 11/4/09
(Chair signature) /	Date:
(Chair signature)	Date:
Approved by Faculty Senate:(Chair signature)	

From: 573 341 4362 Page: 36/42 Date: 11/13/2009 10:46:25 AM CC File # 7862-2009-BUS-360-32 Effective Year: 2010 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 🗌 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.) 1. Department: Business & Info Tech 2. Discipline and Course Number: Present: BUS 360 Proposed: 3. Course Title: Present: Business Operations Proposed: **Abbreviated Course Title:** (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) This course examines the concepts, processes, and institutions that are fundamental to an Present: understanding of business operations within organizations. Emphasis is on the management and organization of manufacturing and service operations and the application of quantitative methods to the solution of Proposed: 5. If course requires field trip check box: 🗌 Total: Lab: Lecture: 3.0 Present: 6. Credit Hours: Total: Lecture: Lab: Proposed: 7. Prerequisites: Present: Math 12, Stat 211, and Bus 120 Proposed: Math 8 or 12 or 14, any Statistics course, Bus 120 or Eng Mgt 130 or Eng Mgt 131 or Eng Mgt 230 Elective for Majors: \square 8. Required for Majors: 🛛 9. Justification: Prerequisite change based on current content of the course and instructor feedback. 10. Semesters previously offered as an experimental course (101, 201, 301, 401):

11.	List all co-liste	ed courses,	initialed by	pept.	Chair, i	r signature	goes not	, appear	DEIOW

1)	2)	3)

8) 5) 6)
Recommended by Department Caroline July

Recommended by Department (Chair signature)

Recommended by Discipline Specific Curricula Committee (Chair signature)

Approved by Curricula Committee: ______(Chair signature)

Approved by Faculty Senate: (Chair signature)

Date: _____

Date: _____

From: 573 341 4362 Page: 37/42 Date: 11/13/2009 10:46:25 AM

Effective Yea		⊠ Spring 🗆		CC File #	7863-2009-BUS-3	30-32
		Course C	hange Fo	orm (C	courses.	
Course Cha	nges (Chec	k all changes.)				
New Course	Cour	se Deletion 🗌	Credit Hou		Prerequisites 🗵	
Course Title	Catal	log Description 🗌	Course Nu		Co-listing 🗌	
Course Info	ormation (1-9 Must Be Complet	ed. Leave "Propos	ed" items blar	nk if no change is bei	ng made.)
1. Departme	ent: Business	s & Info Tech				
		Number: Prese	nt : BUS 380	Propo	sed:	
3. Course Titl		: Strategic Manag				
	Propose	d:				
Abbreviat	ed Course 1	Γitle:			la Changes \	
	(24 Spa	ces or Less. Only n O Character Spaces o	eeded for New Co	ourses or Ht	le Changes.)	
Present:	Study of the strategies d	e formulations and esigned to achieve d extensively.	implementation (of corporativ ojectives. Ca	e, business, and fu ase studies and res	nctional earch reports
Proposed:						
5. If course r 6. Credit Hou 7. Prerequisi Present:	rs: tes:	trip check box: Present: Proposed: and FIN 250; Sen	Lecture: 3.0 Lecture: ior Standing	Lab: Lab:	Total: Total:	
Propose	d: (MKT 31	1 or Eng Mgt 251)	and (FIN 250 or	Eng Mgt 252) and Senior stand	ing
8. Required f	or Majors: 🗵 on: Prerequ	Elective for Mulisite change based		ent of the co	urse and instructor	feedback.
		y offered as an exp ses, initialed by De				
4)	5)		6)			
B	ad by Dazas	mont And			∠ Date	10/16/09
Recommend			(Chair signature)	P 7	1111	11/4/29
		ine Specific Curricu	la Committee (Chair signature)	Charg the	Date Date	. <u>"/ 7/2 (</u>
Approved by	Curricula Co	mmittee:	(Chair signature)			
Approved by	Faculty Sen	ate:	(Chair signature)		Date	<u> </u>

From: 573 341 4362 Page: 38/42 Date: 11/13/2009 10:46:26 AM CC File # 7864-2009-ERP-246-32 Effective Year: 2010 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 🗌 Course Number \Box 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: Business & Info Tech Proposed: 2. Discipline and Course Number: Present: ERP 246 Present: Introduction to Enterprise Resource Planning 3. Course Title: Proposed: **Abbreviated Course Title:** (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) Fundamentals of enterprise resource planning (ERP) systems concepts, and the importance of Present:

Present.	integrated information s procurement, productio and example ERP system	systems in an organiz n, and sales business	ation. The fo	cus of this course ing ERP software	is on illustrating . Use of SAP as
Proposed:					
5. If course r	equires field trip check b				
6. Credit Hou		Lecture: 3.0	Lab:	Total:	
	Proposed:	Lecture:	Lab:	Total:	
7. Prerequisi Present:					
Propose	d: IST 50				
 Justification Semester List all control 	on: Prerequisite change irs previously offered as o-listed courses, initialed	e based on current co an experimental cour by Dept. Chair, if sig	se (101, 201,	301, 401):	
1)	2)	3)			
4)	5)	6)	1		
Recommend	ed by Department	(Chair signature)	stry	00 // D	ate: <u>/ 0//6/04</u>
Recommend	ed by Discipline Specific	(Chair signature) . Curricula Committee .(Chair signature)	Day Mac	het D	ate: <u>/////09</u>
Approved by	Curricula Committee:	(A)		_ _ D	ate:
Approved by	Faculty Senate:	(Chair signature) (Chair signature)		D	ate:
	,				

From: 573 341 4362 Page: 39/42 Date: 11/13/2009 10:46:26 AM CC File # 7865-2009-FIN-250-32 Effective Year: 2010 Spring 🗌 Term: Summer 🗌 Fall 🛛 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 Course Title 🔲 Catalog Description 🗌 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Business & Info Tech 2. Discipline and Course Number: Present: FIN 250 Proposed: 3. Course Title: Present: Corporate Finance I Proposed: **Abbreviated Course Title:** (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) This course studies the need for funds in business and the techniques of analysis used to Present: determine how effectively thees funds are invested within the firm. Topics include institutions, instruments, and markets concerned with raising funds. Proposed: 5. If course requires field trip check box: \Box Total: Lab: 6. Credit Hours: Present: Lecture: 3.0 Total: Lecture: Lab: Proposed: 7. Prerequisites: Present: BUS 120, and Econ 121 or Econ 122 Proposed: (BUS 120 or Eng Mgt 130 or Eng Mgt 131 or Eng Mgt 230) and (Econ 121 or Econ 122) Elective for Majors: \square 8. Required for Majors: Prerequisite change based on current content of the course and instructor feedback. 9, Justification:

10. Semesters previously offered as an experimental course (101, 201, 301, 401):

2)

1)

11.	List all co-listed co	urses, initialed by Dept	Chair, if signature	does not appear i	selow.
1)	2) 3)	}		

4) 5)	a 6)		1 /
Recommended by Department <u>4</u>	woling fisher		Date: <u>///4/09</u>
Recommended by Discipline Specific	c Curricula Committee	Day The Sebest	Date: 11/5/09
Approved by Curricula Committee:	(Chair signature)		Date:
Approved by Faculty Senate:	(Chair signature)		Date:

(Chair signature)

(Revised 1/29/09)

From: 573 341 4362 Page: 40/42 Date: 11/13/2009 10:46:26 AM

Effective Year Term: Summer					# 7866-2009-IST -	
	Τł	Course C	Change Formodifying	orm (0 permanent	CC) courses.	
Course Char New Course Course Title Course Info	nges (Chec Cour: Catal rmation (k all changes.) se Deletion log Description l-9 Must Be Comple	Credit Ho Course Ni	urs 🗌 umber 🗍	Prerequisites	
		Number: Pres	ent: IST 223	Prop	osed:	
3. Course Title		Database Mana				
Abbreviate 4. Catalog Des	(24 Spac cription <i>(30</i>	Fitle: ces or Less. Only I O Character Spaces introduces the co	or Less.)			ues in database
	The course architecture	introduces the col e, design, administ	tration, and imple	mentation a	are covered.	
Proposed: 5. If course re	quires field	trip check box: []			
			Lecture: 3.0	Lab:	Total:	
6. Credit Hour	s:	Present:	recrais: 5:0			
		Present: Proposed:	Lecture:	Lab:	Total:	
6. Credit Hour 7. Prerequisite Present:		* *	•		Total:	
7. Prerequisito Present:	es: IST 141	* *	Lecture:		Total:	
7. Prerequisito Present:	es: IST 141 I: IST 50 a or Majors: ⊠ n: IST 14	Proposed: nd (IST 151 or Co	Lecture: omp Sci 153) Majors: □	Lab:		t of the course
7. Prerequisite Present: Proposed 8. Required for 9. Justification	ist 141 I: IST 50 a or Majors: n: IST 14. and ins	Proposed: nd (IST 151 or Co Elective for 1 no longer exists	Lecture: omp Sci 153) Majors: Prerequisite cha	Lab: ange based	on current conten	t of the course
7. Prerequisite Present: Proposed 8. Required for 9. Justification 10. Semester 11. List all co-	IST 141 I: IST 50 a or Majors: n: IST 14. and ins rs previously	Proposed: nd (IST 151 or Co Elective for no longer exists structor feedback.	Lecture: omp Sci 153) Majors: Prerequisite cha perimental course ept. Chair, if signa	Lab: ange based	on current conten	t of the course
7. Prerequisite Present: Proposed 8. Required for 9. Justification 10. Semester 11. List all co-1) 4)	IST 141 I: IST 50 a or Majors: IST 14 and ins rs previously elisted cours 2)	Proposed: Ind (IST 151 or Co Elective for no longer exists structor feedback. offered as an exist ses, initialed by Do	Lecture: omp Sci 153) Majors: Prerequisite cha perimental course ept. Chair, if signa 3)	Lab: ange based	on current conten 301, 401): ot appear below.	t of the course ite: <u>10/16/09</u>
7. Prerequisite Present: Proposed 8. Required for 9. Justification 10. Semester 11. List all con1) 4) Recommende	IST 141 I: IST 50 a or Majors: n: IST 14. and ins rs previously elisted cours 2) 5) d by Depart	Proposed: Ind (IST 151 or Co Elective for no longer exists structor feedback. offered as an exist ses, initialed by Do	Lecture: omp Sci 153) Majors: Prerequisite cha perimental course ept. Chair, if signa 3) 6) Chair signature) cula Committee	Lab: ange based e (101, 201, ature does n	on current conten 301, 401): ot appear below.	
7. Prerequisite Present: Proposed 8. Required for 9. Justification 10. Semester 11. List all cont) 4) Recommende Recommende	IST 141 I: IST 50 a or Majors: n: IST 14 and ins rs previously listed cours 2) 5) d by Depart d by Discipli	Proposed: Ind (IST 151 or Collina) Elective for 1 no longer exists structor feedback. Y offered as an existe, initialed by Document	Lecture: Omp Sci 153) Majors: Prerequisite cha perimental course ept. Chair, if signa 3) 6) (Chair signature) cula Committee (Chair signature)	Lab: ange based e (101, 201, ature does n	on current content 301, 401): ot appear below.	ite: <u>10/16/09</u>
7. Prerequisite Present: Proposed 8. Required for 9. Justification 10. Semester 11. List all continued 4) Recommende Recommende Approved by	IST 141 I: IST 50 a Ir Majors: In: IST 14 I	Proposed: Ind (IST 151 or Co Elective for 1 no longer exists structor feedback. V offered as an exists ses, initialed by Do Iment	Lecture: omp Sci 153) Majors: Prerequisite cha perimental course ept. Chair, if signa 3) 6) (Chair signature) cula Committee (Chair signature) (Chair signature)	Lab: ange based e (101, 201, ature does n	on current content on current content on current content on content on content on content on content on content on current on curren	ite: <u>10/16/09</u> ite: <u>11/4/09</u>

From: 573 341 4362 Page: 41/42 Date: 11/13/2009 10:46:27 AM CC File # 7867-2009-IST-241-32 Effective Year: 2010 Fall 🗵 Term: Summer 🔲 Spring 🗌 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 🛄 Co-listing 🔲 Course Number Catalog Description 🔲 Course Title 🗌 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Business & Info Tech 2. Discipline and Course Number: Present: IST 241 Proposed: 3. Course Title: Present: E-Commerce Proposed: **Abbreviated Course Title:** (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) Introduction to fundamental concepts of management and application to Information Present: Technologies. This course examines the use of IT in business processes and the management issues of integrating IT inro organization processes to gain a competitive advantage. Topics include: management; organizatio Proposed: 5. If course requires field trip check box: \Box Total: Lab: 6. Credit Hours: Present: Lecture: 3.0 Total: Lab: Lecture: Proposed: 7. Prerequisites: Present: IST 141, IST 286 Proposed: IST 50 and IST 286 Elective for Majors: \square 8. Required for Majors: 🛛 IST 141 no longer exists. Prerequisite change based on current content of the course 9. Justification: and instructor feedback. 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.

(Revised 1/29/09)

Date: 11/5/09

Date: _____

Date: ___

(Chair signature)

(Chair signature)

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5)

Recommended by Discipline Specific Curricula Committee

Recommended by Department

Approved by Faculty Senate: ___

Approved by Curricula Committee: __

From: 573 341 4362 Page: 42/42 Date: 11/13/2009 10:46:27 AM

Effective Yea Term: Summe		⊠ Spring 🗖		CC File #	7868-2009-I	ST -3 54-32
	Τł	Course Chais form is for creati	nange Fo	rm (C	C) tourses.	
Course Cha	nges (Chec] Cours		Credit Hour Course Nun	s 🗌 nber 🗌	Prerequisit	
			d. Leave Propose	a lecture even	,,	_
1. Departme			IST 354	Propo	sed:	
2. Discipline 3. Course Title				•		
	ed Course 1 (24 Spacescription (30)	itle: ces or Less. Only ne O Character Spaces or	Less.)			111 a dia
Present:	The course	ll learn current prac covers tools for dev ed multimedia enviro	elopment of 2-0	ment and de and 3-D gra	esign of inter aphics, video,	active multimedia. . audi, animation,
Proposed:						
		trip check box: 🗆	Lecture: 3.0	Lab:	Total:	
6. Credit Hou	rs:	, , , , , , , , , , , , , , , , , , , ,	Lecture: 3.0 Lecture:	Lab:	Total:	
7. Prerequisit Present:		Cmp Sc 53 or Cmp S				
Propose	d: IST 5 1 o	r Comp Sci 53 or Co	mp Sci 73 or Cor	mp Sci 74		
8. Required f 9. Justification	or Majors: 🗆 on: Prerequ	Elective for Ma uisite change based		nt of the co	urse and inst	ructor feedback.
		offered as an expe ses, initialed by Dep 3				ow.
4)	5)	e)			
Recommende	ed by Depart) ine Specific Curricul	Chair signature) a Committee (Chair signature)	y Thole	fust-	Date: 10/16/09 Date: 11/4/09
Approved by	Curricula Co	mmittee:	(Chair signature)			Date:
Approved by	Faculty Sen	ete:	(Chair signature)			Date:
			(Chail Signotaly)			

Effective Term: Summer

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Date: 11/13/2009 10:58:15 AM

Date: 10/23/2009 11:17:55 AM From: 573 341 4362 Page: 1/16 CC File # 7870-2009-ME-324-20 Effective Year: 2010 Spring 🖾 Fall 🗀

Course Chang	e Form ((CC)
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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 (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mechanical and Aerospace Engineering 2. Discipline and Course Number: Present: Engineering Mechanics 324 Proposed: Present: Engr Plasticity I 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) Present: Proposed: 5. If course requires field trip check box: 🔲 Total: Lab: Lecture: Present: 6. Credit Hours: Total: Lab: Proposed: Lecture: 7. Prerequisites: Present: Proposed: Elective for Majors: 8. Required for Majors: 🗌 The engineering mechanics programs have all been discontinued and there are no 9. Justification: more students enrolled. All engineering mechanics courses will either be eliminated or renamed/renumbered using a curricular designator other than ENG MECH. 10. Semesters previously offered as an experimental course (101, 201, 201, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 2) 1) 4) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: (Chair signature) Date: _ Approved by Faculty Senate: _ (Chair signature) (Revised 1/31/08)

08/19/09

Page: 2/43

Date: 11/13/2009 10:58:16 AM

From: 573 341 4362 Page: 2/16 Date: 10/23/2009 11:17:56 AM cc File # 7871 - 2009 - Emech - 424-20 Effective Year: 2010 Spring 🖾 Fall 🔲 Effective 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 🗆 Course Title 🔲 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mechanical and Aerospace Engineering 2. Discipline and Course Number: Present: Engineering Mechanics 424 Proposed: Present: Engr Plasticity II 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) Present: Proposed: 5. If course requires field trip check box: 🗆 Total: Lab: Lecture: Present: 6. Credit Hours: Total: Labi Proposed: Lecture: 7. Prerequisites: Present: Proposed: Elective for Majors: 🗆 8. Required for Majors: 🔲 The engineering mechanics programs have all been discontinued and there are no 9. Justification: more students enrolled. All engineering mechanics courses will either be eliminated or renamed/renumbered using a curricular designator other than ENG MECH. 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 Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: (Chair signature) Date: , Approved by Faculty Senate: _

08/19/09

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(Revised 1/31/08)

(Chair signature)

From: 573 341 4362 Page: 3/43 Date: 11/13/2009 10:58:16 AM

From: 573 341 4362 Page: 3/16

Date: 10/23/2009 11:17:56 AM

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ffective Year: 2010	0 ner 🔲 🛮 Fall 🗀 S	pring 🗵	CC File #	1872-20	M-HE-321-20
		Change !	Form (C	CC)	
	This form is for cr	eating or modify	ng permanant	courses.	
Course Changes (——————————————————————————————————————			_
lew Course 🗆	Course Deletion 🗵	Credit H		Prerequisit	
	Catalog Description (Course	Number 🛄 🗼	Co-listing [
Course Informati	on (1-9 Must Be Comp	oleted. Leave "Prop	osed" items bis	ank it no change	is being made.)
i. Dapartment: Med	chanical and Aerospa	ce Engineering	,		
2. Discipline and Co	urse Number: Pr	esent : Aero Eng	321 Pro p	osed:	
	sent: Aerodynamic posed:	E Cad Design			
Abbreviated Cou (24	Spaces or Less. Only	y needed for New	Courses or Ti	(tle Changes.)	
4. Catalog Description Present:	n <i>(40 Words or Less)</i>				
Proposed:					
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5. If course requires	field trip chack box:				
6. Credit Hours:	Present:	Lecture:	Lab:	Total:	
	Proposed:	Lectures	1.ab:	Total:	
7. Prerequisites: Present:					
Proposed:					
8. Required for Majo	rs: 🔲 Elective fo	or Majors: 🔲			
9. Justifications Ti	nis course has not be each it in the near fut	en taught within	the past 10 ye	ears, and there	are no plans to
			/	*A* 401)-	
10. Semesters prev	iously offered as an c courses, initialed by	nent. Chair, if sic	insture does :	not appear beig	w.
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4)	5)	12 1 1711	(4.0 6)		10 100 100
Recommended by D	epartment	andlla	dha_	· 	Date: 10/09/09 Date: 11-0º1
		(Chair signature	L	1	1-1-19
Recommended by D	iscipline Specific Cur	ricula Committee Chair signature	Fring 15	az vv	pate: N 1 0 1
		•	ď		Date:
Approved by Curricu	ıla Committee:	(Chair signature)		
Americal his Carolle	y Senate:			<u> </u>	Date:
Abbrosed by Lecour	,	(Chair signature)		
08/21/09					(Revised 1/31/08)

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From: 573 341 4362

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Date: 11/13/2009 10:58:16 AM

Date: 10/23/2009 11:17:57 AM

CC File # 7873-2009-HE-341-20 Effective Year: 2010 Spring 🖾 Fall 🗔 Effective Term: Summer 🗆 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prereguisites 🗆 Credit Hours 🗀 Course Deletion 🖾 New Course 🗆 Co-listing 🗆 Course Number 🗆 Catalog Description 🗆 Course Title 🔲 Course Information (1-9 Must Be Completed. Leave "Proposed" Items blank if no change is being made.) 1. Department: Mechanical and Aerospace Engineering 2. Discipline and Course Number: Present : Aero Eng 341 Proposed: Present: Exper Stress Analysis I 3. Course Title: Proposedi Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Present: Proposedi 5. If course requires field trip check box: 🖂 Labi Totali Lecture: Present: 5. Credit Hours: Lab: Total: Lecture: Proposed: 7. Prerequisites: Presents Proposed: Elective for Majors: 🔲 8. Required for Majors: 🗌 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) 4) Recommended by Department . Recommended by Discipline Specific Curricula Committee (Chair signature) Date: _ Approved by Curricula Committee: (Chair signature) Date: _ Approved by Faculty Senate: _ (Chair signature) (Revised 1/31/08) 08/21/09

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Date: 11/13/2009 10:58:17 AM

Date: 10/23/2009 11:17:57 AM

From: 573 341 4362 cc File # 7874-2009-AE-487-20 Effective Year: 2010 spring 🖾 Fall 🔲 Effective 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 🗆 Course Title 🗔 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mechanical and Aerospace Engineering 2. Discipline and Course Number: Present : Aero Eng 487 Proposed: Present: Finite Elem Approx III 3, Course Title: Proposed: Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words of Less) Presenti Proposed: 5. If course requires field trip check box: \square Total: Lab: Lecture: Presenti 6. Credit Hours: Total: Lab: Lectura: Proposed: 7. Prorequisites: Present: Proposed: Elective for Majors: 🔲 8. Required for Majors: 🗔 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) Mc Eng 487 2) 4) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: (Chair signature) Date: ____ Approved by Faculty Senate: _ (Chair signature)

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08/21/09

(Revised 1/31/08)

From: 573 341 4362 Page: 6/43 Date: 11/13/2009 10:58:17 AM

From: 573 341 4362

Page: 6/16

Date: 10/23/2009 11:17:57 AM

cc File #7875-2009-ME- 337-20

Effective Year: 2010 Spring 🖾 Fall 🗍 Effective Term: Summer Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Preroquisites 🗖 Credit Hours 🗆 Course Deletion 🗵 New Course 🗔 Co-listing Course Number 🗆 Catalog Description 🗖 Course Title 🗆 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mechanical and Aerospace Engineering 2. Discipline and Course Number: Present : Mech Eng 337 Proposed: Present: Atmospheric Science 3. Course Title: Proposedi Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Presenti Proposed: 5. If course requires field trip check box: 🔲 Total: Labi Lecture: Present: 6. Credit Hours: Total: Lab: Lecture: Proposed: 7. Prerequisites: Present: Proposed: Elective for Majors: 🔲 🕟 8. Required for Majors: 🗆 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) 4) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: . Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate: _ (Chair signature) (Revised 1/31/08)

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Date: 11/13/2009 10:58:17 AM

Date: 10/23/2009 11:17:58 AM From: 573 341 4362 Page: 7/16 CC File # 787/1-2009-ME-341-20 Effective Year: 2010 Spring 🖾 Fall 🔲 Effective 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 🗔 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) Course Title 🗆 1. Department: Mechanical and Aerospace Engineering 2. Discipline and Course Number: Present : Mech Eng 341 Proposed: Present: Experimntl Stress Anal I 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) Present: Proposed: S. If course requires field trip check box: 🗆 Totalı Lecture: Lab: Present: 6. Credit Hours: Total: Lab; Lectures Proposed: 7. Prerequisites: Presenti Proposed: Elective for Majors: 🗆 8. Required for Majors: 🔲 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) 6) 5) 4) Date: 10/09/09 Recommended by Department Date: 11-1109 Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: (Chair signature) Date:

08/21/09

Approved by Faculty Senate: _

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(Revised 1/31/08)

(Chair signature)

Page: 8/43

Date: 11/13/2009 10:58:18 AM

Date: 10/23/2009 11:17:58 AM Page: 8/16 From: 573 341 4362

CC File #7877-2009-ME-345-20 Effective Year: 2010 Spring 🛭 rall 🗆 Effective 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.) 1. Department: Mechanical and Aerospace Engineering Proposed: 2. Discipline and Course Number: Present : Mech Eng 345 Non-Intrusive Meas Meth Present: 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) Present: Proposed: 5. If course requires field trip check box: 🗌 Labi Total: Lecture: Presenti 6. Credit Hours: Total: Labi Lecture: Proposed: 7. Prerequisites: Present: Proposed: Elective for Majors: 🔲 8. Required for Majors: 🔲 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) 5) 4) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: . Approved by Curricula Committee: (Chair signature) Date: _ Approved by Faculty Senate: _

08/21/09

(Revised 1/31/08)

(Chair signature)

Page: 9/43

Date: 11/13/2009 10:58:18 AM

Date: 10/23/2009 11:17:58 AM From: 573 341 4362 Page: 9/16 CC FILE # 78 78 - 2009 - ME- 424-20 Effective Year: 2010 Soring 🖾 rati 🔲 Effective 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 🗆 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mechanical and Aerospace Engineering 2. Discipline and Course Number: Present: Mech Eng 424 Proposed: Present: Theory of Stability II 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 Lass) Present: Proposed: 5. If course requires field trip check box: 🗔 Total: Lab: Lecture: presenti 6. Credit Hours: Total: Lab: Lecture: Proposed: 7. Prorequisites: Present: Proposed: Elective for Majors: 8. Required for Majors: 🗔 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: _ Approved by Curricula Committee: _ (Chair signature) Date: . Approved by Faculty Senate: __ (Chair signature) (Revised 1/31/08)

08/21/09

Page: 10/43

Date: 11/13/2009 10:58:18 AM

Date: 10/23/2009 11:14:02 AM Page: 13/15 From: 573 341 4362 cc File # 7879-2009-B105ci-315-32 Effective Year: 2010 Spring 🖾 Fall 🔲 Effective Term: Summer 🗆 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Preroquisites 🗵 Credit Hours Course Deletion 🗆 New Course 🗆 Co-listina 🗖 Course Number Catalog Description \Box Course Title 🗆 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Biological Sciences 2. Discipline and Course Number: Present: Bio 315 Proposed: Present: Developmental Siology 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) Prosent: **Proposed:** 5. If course requires field trip check box: 🗌 Total: 3 Lab: NA Lecture: 3 Present: 6. Credit Hours: Total: Labi Lecture: Proposed: 7. Prerequisites: Present: Bio 115 and Bio 211 Proposed: Bio 211 Elective for Majors: 🗵 8. Required for Majors: 🗖 Prerequisites are being modified given changes to our curriculum. 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. 2) 1) 5) 4) Recommended by Department (Chair signature) Recommended by Discipline Specific Curricula Committee (Chair signature) Date: _ Approved by Curricula Committee: (Chair signature)

10/10/00

Approved by Faculty Senate:

(Revised 1/31/08)

Date: .

(Chair signature)

From: 573 341 4362

Page: 11/43

Page: 14/15

Date: 11/13/2009 10:58:19 AM

Date: 10/23/2009 11:14:02 AM

cc File # 1880-2009-BioSci-345-32 Effective Year: 2010 Spring 🖾 Fall 🗍 Effective Term: Summer 🗌 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prorequisites 🛛 Credit Hours 🗆 New Course 🗆 Course Deletion 🗌 Co-listing 🔲 Course Number Catalog Description 🗆 Course Title Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Biological Sciences Proposed: Present : Bio 345 2. Discipline and Course Number: Present: Comparative Chordate Anatomy 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) Present: Proposed: S. If course requires field trip check box: 🗌 Total: 4 Lab: 2 Lecture: 2 Presenti 6. Credit Hours: Totali Labi Lecture: Proposed: 7. Prerequisites: Bio 110 or 111, and Bio 115 and 116 Present: Proposed: Bio 113 and Bio 114 Elective for Majors: 🖾 8. Required for Majors: 🗌 Prerequisites are being modified given changes to our curriculum. 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. Z) 1) 5) 4) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: _ Approved by Curricula Committee: (Chair signature) Date: _ Approved by Faculty Senate: __ (Chair signature)

10/19/09

(Revised 1/31/08)

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Date: 11/13/2009 10:58:19 AM

Date: 10/23/2009 11:17:59 AM From: 573 341 4362 Page: 10/16 CC File # 1881-2009-(PR-407-20) Effective Year: 2010 Spring 🖾 Fall 🗆 Effective 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 🗀 Course Title 🗆 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science and Engineering Proposed: 2. Discipline and Course Number: Présent : Cer Eng 407 Present: Bhvr-Mtls Vi-Machanical 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) Present: Proposed: 5. If course requires field trip check box: \square **Total:** Lab: Lectures Present: 6, Credit Hours: Total: Lab: Lecture: Proposed: 7. Prereguisites: Present: Proposed: Elective for Majors: 🗆 8. Required for Majors; 🔲 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) Recommended by Department Date: 11-1-09 Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: (Chair signature)

08/21/09

Approved by Faculty Senate:

(Chair signature)

Date:

(Revised 1/31/08)

From: 573 341 4362 Pag

From: 573 341 4362

Page: 13/43

Page: 11/16

Date: 11/13/2009 10:58:19 AM

Date: 10/23/2009 11:17:59 AM

cc File # 7882-2009-Met-351-20 Effective Year: 2010 Spring 🖾 Fatt 🗖 Effective 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.) 1. Department; Materials Science and Engineering 2. Discipline and Course Number: Present : Met Eng 351 Proposed: Present: Min Proc II Flo & Hydro 3. Course Title: Proposed: Abbreviated Course Titlet (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Present: Proposed: 5. If course requires field trip check box: 🗌 Totals Lab: Lacture: Present: 6. Credit Hours: Total: : باها Lectures Proposed: 7. Prerequisites: Present: Proposed: Elective for Majors: 🗆 8. Required for Majors: 🗆 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: (Chair signature) Date: Approved by Faculty Senate: _ (Chair signature) (Revised 1/31/08)

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From: 573 341 4362 Page: 14/43 Date: 11/13/2009 10:58:20 AM Date: 10/23/2009 11:17:59 AM Page: 12/16 From: 573 341 4362 CC FILE # 7883-2009-Met-455-20 Effective Year: 2010 Spring 🛭 Fall 🔯 Effective 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 \Box Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Materials Science and Engineering proposed: 2. Discipline and Course Number: Present: Met Eng 455 Present: Chemical Metallurgy 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) Present:

Proposed:

5. If course requires 6. Credit Hours:	field trip check box. Present: Proposed:	Lecture: Lecture:	Lab: Lab:	Total: Total:
7. Prerequisites: Present:	•			
Proposed:				

8. Required for Majors: 🔲 💮 Elective for Majors: 🗀

9. Justification: This course has not been taught within the past 10 years, and there are no plans to teach it in the near future.

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)

Recommended by Discipline Specific Curricula Committee June Date: 111-09

Approved by Curricula Committee: _______ Date: _______

Approved by Faculty Senate: _______ Date: _______ Continuous (Chair signature)

08/21/09

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(Revised 1/31/08)

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Date: 11/13/2009 10:58:20 AM

From: 573 341 4362

Page: 13/16

Date: 10/23/2009 11:18:00 AM

cc File # 7884-2009-(iv-432-20 Effective Year: 2010 Spring 🖾 Effective Term: Summer 🗖 Fall 🗌 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prorequisites 🛄 Credit Hours Course Deletion New Course 🔲 Co-listing 🗔 Course Number Catalog Description \Box Course Title 🗔 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Civil, Architectural and Environmental Engineering 2. Discipline and Course Number: Present : Civ Eng 432 Proposed Present: Turbince-Opn Chanel Flow 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) Present: Proposed: 5. If course requires field trip check box: 🗌 Total: Lab: Lecture: Present: s. credit Hours: Totals Loctures Labi Proposed: 7. Prerequisites: Present: Proposed: Elective for Majors: 🔲 8. Required for Majors: 🛄 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) 5) 4) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: . (Chair signature) Date: Approved by Faculty Senate: _ (Chair signature) (Revised 1/31/08)

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From: 573 341 4362 Page: 16/43 Date: 11/13/2009 10:58:20 AM

	From: 573 341	1 4362 Page: 14/16	Date: 10/23/2009		^
ffective Year: 20	10 nmer □ Fell □	3 Spring ⊠	CC File #	• 7885-2009- C	N-466-2C
ffective Term: Sur					
	Cour	se Chang	e Form (CC)	
	This form is	for creating or mo	difying permanent	; courses.	
ourse Changes	(Check all change	s.)		Prerequisites 🗆	
ew Course 🗆	Course Deletion	n 🖾 Cre	dit Hours 🖂	Co-listing	
purse Title 🗀	Catalog Descrip	ption 🗆 Co	urse Number 🗆		made.)
ourse Informa	tion (1-9 Must Bo	e Completed. Leave	"Proposed" items be	ank if no change is being	,
. Department: C	ivil, Architectural	and Environmenti	H Eugineering		
. Discipline and	Course Number	; Prosent : Civ E	ng 466 Prop	oosed:	
, Course Title: P	resent: Wastow roposed:	vater Treatment II			
Abbreviated Co	urse Title:		Now Courses of T	itle Changes.)	
()	24 Spaces or Lesi	5. Only needed for (ess)	New Courses or Ti	1814 ALIBRA-1	
4. Catalog Descript Present:	INU (AN AANIMS IN E	***************************************			
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6. Credit Hours:	Present:			Totalı	
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9. Justification:	This course has I	not been taught w	ithin the past 10 yo	ears, and there are no	plans to
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•			course (101, 201,	. 301. 401);	
10. Semesters pro	SVICUSIY OTTOTER (is an experiment. A by Best Chair.	if signature does	not appear below.	
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4)	5	0 / /	/ 6)		1 1 -
	Deventore	Malan	les	Date: _	10/15/69
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		. Audenia Comm	A Lough Parker	ربر المر Date: _	11-1-09
Recommended by	Discipline Specif	ic Curricula Comm (Chair sign	nature)		
		•	•	Date:	
Approved by Curr	icula Committee:	(Chair sign	nature)		
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•		• • • • • • • • • • • • • • • • • • • •	•	Date:	
Approved by Facu		••••	<u> </u>	Date:	
Approved by Facu	ilty Senate:	(Chair sign	naturė)		(Ravised 1/31/08)

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Date: 11/13/2009 10:58:21 AM

Date: 10/23/2009 11:18:00 AM

From: 573 341 4362 cc File #7886-2009-Civ-491-20 Effective Year: 2010 Spring 🖾 Fali 🔲 Effective Term: Summer 🗆 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prerequisites 🗔 Cradit Hours 🗆 Course Deletion New Course 🗆 Co-listing 🗀 Course Number 🗆 Catalog Description Course Title 🗆 Course Information (1-9 Must Be Completed. Leave "Proposed" Items blank if no change is being made.) 1. Department: Civil, Architectural and Environmental Engineering Proposed: 2. Discipline and Course Number: Present : Civ Eng 491 Present: Internship 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) Present: Proposed: 5. If course requires field trip check box: 🗆 Total: Labi Lectures Present: 6. Credit Hours: Total: Lab Lecture: Proposed: 7. Prerequisites: Present: Proposed: Elective for Majors: 8. Required for Majors: 🗆 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 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) 5) 4) Recommended by Department . Recommended by Discipline Specific Curricula Committee (Chair signature) Date: _ Approved by Curricula Committee: . (Chair signature) Date: _ Approved by Faculty Senate: _ (Chair signature) (Revised 1/31/08) This fax was received by GFI FAXmaker fax server. For more information, visit: http://www.gfi.com

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Date: 11/13/2009 10:58:21 AM

Date: 10/23/2009 11:18:01 AM Page: 16/16 From: 573 341 4362 CC File # 7887-2009- (11-499-20) Effective Year: 2010 Spring 🗵 Fail 🗌 Effective Term: Summer 🗆 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prereguisites 🗀 Credit Hours Course Deletion 🖾 New Course 🗆 Co-listing 🗆 Course Number 🗆 Catalog Description 🗆 Course Title 🔲 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Civil, Architectural and Environmental Engineering 2. Discipline and Course Number: Present : Civ Eng 499 Proposed: Present: Case Studies In Civ Engr 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) Present: Proposed: 5. If course requires field trip check box: \Box Total: Lab: Lecture: Present: 6. Credit Hours: Total: Lecture: Lab: Proposed: 7. Prerequisites: Present: Proposed: Elective for Majors: 8. Required for Majors: 🗍 This course has not been taught within the past 10 years, and there are no plans to 9. Justification: teach it in the near future. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dopt. Chair, if signature does not appear below. 3) 2) 1) 4) Recommended by Department Recommended by Discipline Specific Curricula Committee (Chair signature) Date: Approved by Curricula Committee: (Chair signature) Date: . Approved by Faculty Senate: _ (Chair signature)

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Date: 11/13/2009 10:58:21 AM

From: 573 341 4362

Page: 14/22

Date: 10/13/2009 10:35:17 AM

Effective Year: 2011 Effective Term: Summer 🔲

Fall 🗆

Spring 🗵

EC File #2210-Sp2011-MiGig-401

Experimental Course Form (EC)

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

Summer and Fall Semester Offerings - January 1 Spring Semester Offerings - August 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.

Department: Mining and Nuclear Engineering

Discipline and Course Number: Mi Eng 401

Course Title: Geostatistics

Abbreviated Title (24 spaces or loss): Geostatistics

Instructor(s): Kwame Awuah-Offel

Credit Hours:

Lecture: 3

Lab: 0

Total: 3

Prerequisites:

Graduate standing or consent

Semester(s) previously taught: None

Brief Course Description: (40 words or less)

Definition of geostatistical data; theory of random fields; autocorrelation and measures of spatial variability including semivariograms, variograms and covariance functions; and spatial prediction and validation. Case studies in mineral resource estimation and environmental pollutant prediction will be presented.

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

2)

4)

Department Chair:

(Chair Signature)

Date: 0-19-09

Curricula Committee:

(Chair Signature)

Date: 0-19-09

Date: 0-19-09

Curricula Committee:

(Chair Signature)

(Revised 1/31/2008)

09/23/09

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From: 573 341 4362 Page: 20/43 Date: 11/13/2009 10:58:22 AM

From: 573 341 4362

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Date: 10/13/2009 10:35:18 AM

Effective Term: FS-2009 2010

EC File #2211-F5 2010-PE-301

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	on Schedule of C	lasses are as	follows:
		and Fall Semes emester Offerin		
EC form must be experimental co	e submitted each :	semester it is to red should be si	be offered, numbers of a	es are April 30 and October 1. An not to exceed two offerings. An CC form. Co-listed offerings y discipline.
School or Colleg	je:			
Department: Ge	ological Sciences an	d Eng		
Discipline and C	Course Number: PE	301		•
Course Title: We	ell Completion Desig	n		
Abbreviated Tit	ie (24 spaces or le	es): Weil Compiti	n Desgn	
Instructor(s): S	hari Dunn-Norman			,
Credit Hours:	Lecture: 3	Lab:	Total:	
Prerequisites:	PE 241			
Semester(s) pro	aviously taught: Fa	ii 2007; 13 stude	nts	
An overview of th Examination of ty In designing well (pes of well completic	nd processes empons and their use; verview of sand o	influence of w	leting oil and gas wells. vell geometry and considerations terals and intelligent well
List all co-listed included below.	courses: Include in	ritials of Dept. Ch	air(s) and Deap	n(s) if signatures are not already
1 .	,		4.	
2.		<i>^</i> .	5. <i>)</i>	
3. Department Cha	ir: Olestow	hair Signature	audr	Date: 9/23/05
College/School	Dean:	Rayus Dean Signature	 .	Date: 10~19\09
BMR Curricula C	ommittee:	Chair Signature		(Revised 2/14/2002)
09/22/0 9 			e Cormon infere	chion vicit http://www.cfi.com

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Spring 🖾

Page: 16/22

Effective Year: 2010 Effective Term: Summer

Fall 🗔

From: 573 341 4362

Date: 10/13/2009 10:35:18 AM

· EC FIIe # 22/2-Sp2010-PE-401

Experimental Course Form (EC)

This form must be filed with the Secretary to the Campus Curricula Committee, after the department chair's notation, by the appropriate deadline. Filing deadlines for inclusion in the

Initial release of the Schedule of Classes are as follows: Summer and Fall Semester Offerings - January 1

	Spring Ser	nester Offerin	gs – August 1	
An experimenta	st be submitted each of course that is required outlited on one form, o	uired should b	e submitted on a CG	to exceed two offerings. Form. <i>Co-listed offerings</i> pline.
Department: Ge	eological Sciences and	Engineering		
Discipline and C	Course Number: Pet l	Eng 401		
Course Title: Ad	vanced Well Completion	on Design		
Abbreviated Tit	le (24 spaces or less	s): Adv Well Co	mpitn Desgn	
Instructor(s): S	. Dunn-Norman			
Credit Hours:	Lecture: 3	Lab:	Total:	
Prerequisites:	PE 241			
Semester(s) pro	eviously taught:			
	scription: (40 words			
Examination of ty in designing well of	e hardware, fluids and pes of well completion completions. Brief ove ew of completion exar	s and their use; erview of sand o	influence of well geo control, multilaterals a	metry and considerations and intelligent well
List all co-listed 1)	courses: Include init 2)	ials of Pept. Ch	nir, if s ignature is not 3)	aiready included below.
4)	5)	1.	6)	•
Department Chair	: Oldan	(Chai	TSignature)	Date: <u>9/25/0</u> 9
Discipline Specific	Curricula Committee:	Juny B	esture)	Date: 10-19-09
Curricula Committ	ee:	(Chair	Signature)	Date:

(Revised 1/31/2008)

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Date: 11/13/2009 10:58:22 AM

From: 573 341 4362

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Date: 10/13/2009 10:35:18 AM

Effective Term: W2010

BC File # 2214-5p2010-CE-301

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 a urse that is require itted on one form,	ed should be sul	omitted on a c	sc form. Co-//	vo offerings. An isted offerings
School or Colleg	e: Engineering				
Department: Civ	il, Assistantus di Rand				
Discipline and C	ourse Number: 30	1			
Course Title: Concrete Pavement Design					
Abbreviated Titl	e (24 spaces or le	ss):			
Instructor(s): D	avid Richardson		·		
Credit Hours:	Lecture: 3	Lab: 0	Total: 3		
Prerequisites:	CE 216 with a grad	e of "C" or better			
Semester(s) pre	viously taught: W	2008	•		
Structural design (scription: (40 work of rigid pavements i is distribution, and t	ncluding loading cl	haracteristics, p tic variables on	roperties of pa design criteria	vement ·
included below. 1.	courses: Include in	itials of Dept. Cha	ir(s) and Dean(4. 5.	(s) if signature	s are not aiready
2. 3.			6.		. 1
Department Cha	ir: <u> </u>	hair Signature		Date:	128/09
College/School (Dean: Jamy	Dean Signature	<u>-</u>	Date:10_	-19-09
UMR Curricula Co		hair Signature		Date:	<u> </u>

09/28/09

(Revised 2/14/2002)

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CE 301 COURSE POLICY

1. Grading: Exams (80%), Homework (20)

Grades: A = 90 to 100%, B = 80 to 89%, C = 70 to

79%, D = 60 to 69%, F - below 60

2. Homework: Due at the <u>beginning</u> of the class on day due. Anytime past that point will be considered late. Late homework will be docked 10%. Homework more than 1 day late will be docked 50% and may not be graded. After the set is graded, late homework will not be accepted.

- 3. There is no "extra work" for anyone to improve a grade.
- 4. There is <u>no</u> "makeup" test to improve a poor grade, or for <u>unexcused</u> absence from a test. In the latter case the grade is zero on the test. Asking faculty to design a special exam just for one person for the student's convenience is unprofessional, at the very least.
- 5. If anyone misses an examination, or wants to, they are to turn in a neatly written statement as to why it was missed, with any helpful documentation. For example, if an exam is missed for a medical reason, there is very little hope without a statement from a doctor treating you. "Working on other projects", "not quite ready", "on an interview trip", "I forgot", "looking for an apartment", "want to leave town early" are typical excuses worth zero on tests. You will be told as soon as possible whether the excuse is acceptable.
- 6. Partial credit is <u>not open to dispute</u>. However, an error in grade computation should be pointed out. Time limit is one week from return of test.
- 7. As far as the course grade is concerned, it is of no relevance if a test score is, say, 70% because of all silly errors as opposed to conceptual errors. The only thing that counts is that it is 70%. It will not be reevaluated later on some vague basis of the errors being somehow less significant, and the 70 should be 73, etc. Tests are simply not open for re-evaluation on any basis other than an error in marking a correct answer wrong. After all, differences in mechanical errors vs.

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conceptual errors were taken into account in arriving at that numerical grade; so there is nothing left to consider.

- 8. You are being graded strictly on this course and <u>not</u> on the basis that if you get one letter grade higher you will be allowed to remain in college, etc. That is your problem and all faculty resent any student trying to unload his/her accumulated history of scholastic difficulty on them. We do not "negotiate" grades, as most of you know. Scholastic probation, etc., are irrelevant to my grading procedure. All students are graded strictly on <u>performance</u>. Neither my opinion nor your opinion of what you "really" know, nor personality, <u>nor any other factor</u> is a consideration in your grade.
- 9. <u>Do not schedule events to occur during finals week</u>, such as interview trips, vacations, job start-ups, marriages, elective surgery, etc. **Don't even ask**. As stated before, a missed exam results in a zero grade. Please inform anyone who may invite you to be in a wedding party that you will <u>not be available</u> on the day of the CE 301 exam. Do this early in the semester.
- 10. Attendance policy: Students are expected to attend class regularly. Attendance will be taken at the beginning of class. If you are tardy, you will be counted as absent; in this case, you should notify the instructor of your attendance at the end of the period. Any time after that, you will be counted as absent. You will lose one letter grade for every 6 unexcused absences [excused absences are limited to school-sanctioned activities. All others are unexcused]. You may be dropped from the class if absences become excessive.
- 11. Student Academic Dishonesty. Academic honesty is essential for the intellectual life of the University and for your continued academic and professional development and growth. As your instructor, I have a very high standard for academic honesty in all your work for this class. You as a student in this class have an obligation to adhere to that high standard. Should a case of academic dishonesty arise during the course of the semester, I will do the following: I will assign a failing grade to the work in question. I may fail you for the course. And I will refer the incident to both the department Chair and to the Vice Provost for Undergraduate and Graduate

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Studies as required in Section 200.010 of the Collected Rules and Regulations of the University of Missouri.

By enrolling in this course and receiving this syllabus, whether in printed or electronic format, you are certifying knowledge of Sections 200.100 (Standard of Conduct) and 200.020 (Rules of Procedures in Student Conduct Matters) in the Collected Rules and Regulations of the University of Missouri and are pledging to abide by them. If you have not yet read these Sections, please do so. They may be found at the following URL address: http://www.umsystem.edu/ums/departments/gc/rules/programs/200

A more recent site:

http://registrar.mst.edu/academicregs/index.html

An example of academic dishonesty is as follows. You must not place in any written assignment, lab report or otherwise, material that has been lifted, scanned, or copied, from any other document (eg other student's work, "files", etc), except for those specifically approved by the instructor.

- 12. Please do not email the instructor asking for your grade at the end of the semester.
- 13. Disability Support Services: http://dss.mst.edu: If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need to request that the Disability Services staff send a letter to me verifying your disability and specifying the accommodation you will need before I can arrange your accommodation.

Course Policy CE301.doc

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CE 301 CONCRETE PAVEMENT DESIGN

PREREQUISITES:

Preceded by CE 216 with a grade of "C" or better

SEMESTER:

Winter 2010

TEXT:

Concrete Pavement Design, Construction, and Performance (Delatte)

Course Notes= CN

INSTRUCTOR'S NAME:

Dr. David N. Richardson

INSTRUCTOR'S OFFICE:

126 Butler-Carlton Hall (573)341-4487

INSTRUCTOR'S PHONE: INSTRUCTOR'S e-mail:

dnr@mst.edu

PERIOD	TOPIC	READING ASSIGNMENT	HOMEWORK
1-10	I. INTRODUCTION A. Design Goals B. Road Tests/Evolution C. Pavement Types D. Performance/Distress E. Surface Characteristics F. Design Period/Pavement Selection G. Environmental Effects	Coursenotes (CN) Ch.1: 1-11; CN Ch.2: 25-29; 37-45; CN CN; Ch.3: 46-62 CN; Ch.3: 62-68 CN CN	HO HO HO
	II. SUBGRADES, SUBBASES & BASES A. Subgrade Support 1. Classification 2. Preparation 3. Swelling Soil 4. Frost Action 5. Soil Stabilization	Ch.4: 69-73 Coursenotes Ch.13: 249-252 Coursenotes Ch.4: 73; Ch.13: 252-253 Coursenotes Ch.4: 73-74; Ch.13: 253-254; Coursenotes Ch.4:76-78; Ch.13: 254-255; Coursenotes	
11	B. Subbases & Bases	Ch.4: 74-80; Ch.13: 255-261	

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12-20	III. DESIGN FUNDAMENTALS	Ch. 7: 129-130	
	1. Introduction	Ch. 7: 129-130 Ch. 5: 95-110; Ch.6: 111-128	. 1
	Concrete Materials	Ch. 5: 95-110, Ch.5: 111-125 Ch. 7: 140-141; CN	
		Ch. 7: 130-132	ŀ
	3. Design Methods/Theories	Ch. 7: 130-132 Ch. 7: 132-140	
	4. Traffic	Ch. 2: 30-37;Ch.7: 141-148;	ľ
	Stresses & Deflections		Į.
	6. Joints	150-151	
		Ch.7: 151-154	
	7. Tie bars	Ch.7: 148-149	
	8. Dowels	Coursenotes Ch.9: 194-197; Ch.12: 231-	
	9. Reinforcement		
	10. Design Features	233	
		Ch.4: 80-94; Ch.9: 189-194	
	11. Drainage	Coursenotes	
	12. Typical Sections	Coursenotes	
	13. Specifications		
	EXAM II		
21			
- '			
22-31	IV. PCA METHOD	Ch.8: 166-169	
	A. Introduction	Coursenotes	
	B. Long Method	Ch.9: 172-189	
	C. Simplified Method	Ch.9: 175-189; Coursenotes	
	D. STREETPAVE	Ch.8: 155-166	
	V. AASHTO METHOD	Ch.8: 169-171	
	VI. MEPDG METHOD	Cii.a. 103-171	
	VII. PARKING LOTS	Coursenotes	ļ
	A. Normal Duty	Ch.11: 221-230;Coursenotes	
	B. Industrial	Ch. 9: 180-181; Coursenotes	
Į.	VIII. LIFE-CYCLE COSTS	Off. 9. 100-101, Oddischoto	
	IX. CONSTRUCTION	Ch.14: 262-278;	
1	A. Paving	Ch.15: 279-287	
	D T	Ch.14: 287-298	
	B. Temperature Management	Ch.14: 299-305	
	HIPERPAV	QH. 17. 200-000	,
	C. Acceptance	Ch 16: 306-314	
	X. REPAIR/REHABILITATION	Ch: 17: 315-329	
	VI OVERLAVE	Ch. 18: 330-350	
	XI. OVERLAYS	J	
	REVIEW		
FINALS			
WEEK			
1 AAFF	1		

CE301SylabusW2008.doc (2-7-07;11-5-07;1-9-08,3-20-08;4-8-08)

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EC File # 2215-802010-66-301

Experimental Course Form (EC)

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

> Summer and Fall Semester Offerings – January 1 Spring Semester Offerings - August 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.

Department:	Civil, Archite	ectural, and	Environmenta	al Engineering

Discipline and Course Number: CEARCh301

Course Title: Structural Dynamics

Abbreviated Title (24 spaces or less): Structural Dynamics

Instructor(s): Genda Chen

09/18/09

Credit Hours: Lecture: 3.0 Lab: Total:

Prerequisites: IDE150, CE/Arch217

Semester(s) previously taught: WS08

Brief Course Description: (40 words or less)

This course presents the fundamental concepts in structural dynamics and force distribution in structures under dynamic locds. Specifically, the natural frequency and mode shape of structural systems are investigated. The response and behavior of structural components and systems are studied under machine-induced, blast, wind and earhtquake excitations. Both hand calculations and computer methods for the analysis of lumped and distributed mass models are developed.

List all co-listed courses: Include Initials of Dept. Chair, if signature is not already included below. 1)-4--2) CE301 3)

4) 5)	6)
Department Chair:	Date: 9/28/09
Discipline Specific Curricula Committee: (Chair Signature) (Chair signature)	Date: 10-19-09
Curricula Committee:(Chair Signature)	Date:

(Revised 1/31/2008)

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CE/ArchE301 STRUCTURAL DYNAMICS Winter Semester 2010

Instructor:

Genda Chen, Ph.D., P.E., F. ASCE

Office:

Butler-Carlton Hall, Room 328

Class Schedule:

MW 3:00 p.m. - 4:15 p.m. in CE317

Office Hours:

MW, 1:00 p.m. -3:00 p.m.

4:15 p.m. - 5:30 p.m.

Textbook:

Anil K. Chopra, Dynamics of Structures: Theory and Applications to Earthquake Engineering.

Grading:

Ouizzes (2)

50%

(see Quizzes below)

Homework Final exam

20%

30%

Ouizzes:

Two quizzes will be given during the semester. If a quiz has to be missed for a valid reason ("on the interview trip" is NOT a valid reason), approval from instructor must be obtained in advance. If approved, students will be given an opportunity to take one comprehensive exam during the final exam week for one missing quiz.

Homework:

Assigned problems will be worked in pencil on 8 1/2 x 11 in. engineering paper on one side of the sheet, with each problem starting on a new page or with one inch spacing between problems. The presentation will include a statement of the problem, a neat sketch (optional), and an orderly presentation of the solution. Assigned problems will be collected.

Attendance Policy: Any students with three or more absences without a valid reason may be asked to drop out of the class.

Objectives:

This course presents the fundamental concepts in structural dynamics and the force distribution in structures under dynamic loads. Specially, the natural frequency and mode shape of structural systems are investigated. The response and behavior of structural components and systems are studied under machine-induced, blast, wind and earthquake excitations. Both hand calculations and computer methods for the response analysis of lumped and distributed mass models are developed.

On completion of this course, students should be able to:

- 1. Explain the resonance and beating phenomena as well as the role of damping and inertia in structural dynamics.
- 2. Formulate the equation of motion of a discrete or distributed structural system

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3. Understand and identify the dynamic properties of a discrete or distributed structural system.

- 4. Apply various techniques to solve for the frequencies and mode shapes of structures.
- 5. Determine the responses of simple and complex structures under dynamic loads by modal and Ritz-vector analysis.
- 6. Formulate the damping matrix and apply it in the elastic analysis of structural responses.

Tentative Topics:

- 1. Introduction and application of structural dynamics theory in design
- 2. Dynamic properties and equation of motion
- 3. Resonance and beating phenomena
- 4. Undamped response of simple structures (one degree of freedom)
- 5. Damped response of simple structures
- 6. Effects of various dynamic loads
- 7. Identification of simple structures
- 8. Natural frequency and mode shapes of complex structures (multiple degree of freedom)
- 9. Modal analysis of complex structures
- 10. Damping matrix formulation
- 11. Numerical solution of structural responses
- 12. Ritz vector and Rayleigh-Ritz analysis
- 13. Formulation of the equation of motion of consistent mass systems
- 14. Boundary condition and mode shapes of consistent mass systems
- 15. Discretization of distributed structural systems and accuracy
- 16. Computer model and analysis

CE/ArchE217 and BE150 or equivalent. Prerequisites:

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Effective Year 2010 Effective Term: Summer 🔲 Fall 🔲 Spring 🖂 EC File # 2216-Sp2010-CE-401

Experimental Course Form (EC)

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

> Summer and Fall Semester Offerings – January 1 Spring Semester Offerings - August 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.

Department: Civil, Architectural and Environmental Engineering

Discipline and Course Number: CE 401

Course Title: Special Concretes

Abbreviated Title (24 spaces or less): Special Concretes

Instructor(s): Prof. John J. Myers

Credit Hours:

Lecture: 3

Lab:

Total:

Prerequisites:

Consent of Instructor with Graduate Standing

Semester(s) previously taught: Not Applicable

Brief Course Description: (40 words or less)

Material and structural behavior of special concretes. Optimization of cementitious based systems. Evaluation and NDE/T aspects of concrete.

1)	2)	3)	matrix incitided below.
4)	54	/ 6)	. 1
Department Chair:	Mhon	(Chair Signature)	Date: 9/28/89
Discipline Specific Cur	ricula Committee:	(Chair signature)	Date: 10-19-09
Curricula Committee:_		(Chair Signature)	Date:

09/28/09

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Missouri University of Science and Technology Department of Civil, Architectural, and Environmental Engineering CE 401 – Special Concretes – Spring 2010

INSTRUCTOR

Dr. John J. Myers, P.E. Associate Professor 325 Butler-Carlton CE Hall 1401 North Pine Street Office Phone: 341-6618 Office Fax: 341-4729

Email: <u>imyers@mst.edu</u>

CLASS MEETING: MW 2:00pmm-3:15pm ROOM: CE 317 (To Be Verified)

ADDITIONAL MEETING TIME: As Required - Arranged by Instructor

OFFICE HOURS: MTWR 8:30am-9:15am; or by appointment, 325 Butler Carlton Hall

COURSE DESCRIPTION:

Special Concretes – Material and structural behavior of special concretes. Optimization of cementitious based systems. Evaluation and NDE/T aspects of concrete. *Required Prerequisites*: Consent of the Instructor with Graduate Standing.

TEXTBOOKS AND REFERENCE MATERIALS

Textbooks: There are **no required** textbooks for this course, but numerous references will be provided by the instructor. The following is some reference materials available at the library that will provide some background literature.

- American Concrete Institute Building Code Requirements for Structural Concrete (ACI 318-08) and Commentary (ACI 318R-08).
- Concrete, Second Edition, by S. Mindness, J.F. Young and D. Darwin, Prentice Hall, 2002, 644 pp, ISBN 0-13-064632-6.
- 3. Prestressed Concrete: A Fundamental Approach, Fifth Edition, by Edward G. Nawy, Prentice Hall, 2006, 945 pp. ISBN 0-13-149759-6.
- Reinforced Concrete: Mechanics and Design, Fourth Edition, by J.G. MacGregor and J.K. Wight, Prentice Hall, 2005, 1132 pp. ISBN 0-13-142994-9.
- Advanced Scanning Electron Microscopy and X-Ray Microanalysis, by D.E. Newberry, D.C. Joy, P. Echlin, C.E. Fiori, and J.I. Goldstein. ISBN 0-306-421-40-2.
- Portland Cement Association Concrete Technical Support Library, CD019.02, PCA, 2003.
- 7. Handouts provided by the Instructor.

COURSE OUTLINE:

Lectures:

The lectures will introduce specialized topics affiliated with concrete. This includes concrete specifications, optimization, specialized concretes [modified density, fiber reinforced concrete, high strength concrete, ultrahigh strength concrete, self-consolidating concrete (NS and HS), polymer / polymer modified concrete, environmentally sensitive cementitious-based materials, self-healing / damage detection materials, rapid setrapid patching materials], statistical data analysis processes, structural implications associated with material developments, and evaluation / NDT/E aspects of concrete.

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Additional Class Meeting:

The Additional Meeting Time will be assigned as designated by the instructor for any lab affiliated activities.

Class Attendance:

Class attendance is required and will be monitored by the instructor. If an emergency arises in which you cannot attend class, please notify the instructor ahead of time, by email or phone, such that arrangements can be made for any missed handouts or homework assignments.

Assignments:

Assignments will be assigned throughout the semester and collected as designated by the instructor. Assignments must be neat and organized. Homework assignments will be due as announced by the instructor when assigned. Late homework will be accepted with a 20% penalty for each class meeting past due unless a late submission is approved by the instructor in advance.

Report Assignments / Term Project:

Several report assignments and a term project and presentation will be assigned during the semester. Final submission and presentation of the term project will be due on a date specified by the instructor when the project description is presented in class.

Examinations:

A mid-term exam will be given during a scheduled period. A final will be given at the end of the semester. Missed exams will count as zero. Exams cannot be made up except under very unusual circumstances approved prior to the scheduled exam date by the instructor.

Grading System:

Grades will be based on the performance of exams, assigned homework, and term project, as follows:

Assignments	20%
Term Project	20%
Oral Presentation	10%
Mid-term Exam	25%
Final	25%

Grading Scale: A ≥ 90

 $80 \le B < 90$ $70 \le C < 80$ $60 \le D < 70$ F < 60

Note: Cutoffs may be slightly lower, but will not be higher.

Academic Dishonesty:

Academic honesty is essential for the intellectual life of the University and for your continued academic and professional development and growth. As your instructor, I have a very high standard of academic honesty in all of your work in this class. You as a student in this class have an obligation to adhere to that high standard. Should a case of academic dishonesty arise during the course of this semester, I as the instructor shall make an academic judgment regarding your grade on the work in question and in this course if necessary. By enrolling in this course and receiving this syllabus, whether in printed or electronic format, you are certifying knowledge of Sections 200.010 (Standard of Conduct) and 200.020 (Rules of Procedures in Student Conduct Matters) in the Collected Rules and Regulations of the University of Missouri and are pledging to abide by them. If you have not yet read these Sections of the Collected Rules and Regulations, please do so immediately after class

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or at the next opportunity your schedule allows. They may be found at the following URL address: http://www.umsystem.edu/ums/departments/gc/rules/programs/200/.

Educational Environment:

It is very important to the Instructor that each student has a healthy productive learning environment. If any student feels their learning environment is being restricted by another individual, please feel free to discuss this with the Instructor.

Monday, Jan. 19

Important Dates:

MLK HOLIDAY

Monday, Feb. 23 Last day to change HEARER status: Monday, Feb. 23 Last day to drop without a 'WD' showing on transcript:

Monday, Feb. 23 Last day to add course:

Thur. Mar. 12 - Sun. March 15 Spring Recess Mon. Mar. 23 - Sun. March 29 Spring Break

Saturday, March 7 Mid-semester: Friday, April 17 Last day for dropping a course:

Friday, May 8 Last class day:

BEST WISHES FOR A SUCCESSFUL SEMESTER

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CE 401 - Special Concretes Course Topics

•	COURSE TOPICS TO BE COVERED	
-	MATERIAL ASPECTS	
1.	Overview of Concrete and Concrete Specifications	
2.	Evaluation of Concrete Performance: Techniques and Methods	
3.	Optimization of Concrete Materials	RA
	Basic Fundamentals and Techniques	
	> Conventional Techniques: NSC and HSC	
	> Particle Packing Models (development and implementation)	
4.	Modified Density Concretes	
5.	Fiber Reinforced Concrete	
6.	High Strength Concrete	
7.	Ultra-High Strength Concrete	
8.	Self Consolidating Concrete (Normal Strength and High Strength)	
8.	Polymer Concrete	
9.	Polymer Modified Concrete	
10.	Environmentally Sensitive (Sustainable) Cementitious Materials	
11.	Concrete with Self-Healing / Damage Detection Materials	
12.	Rapid Set Concretes including Rapid Patching Materials	
13.	Statistical Data Analysis and Characterization of Research Generated Data	RA
+	, , , , , , , , , , , , , , , , , , ,	
	STRUCTURAL ASPECTS	
14.	Structural Implications of Material Advances on Design and Analysis	
15.	Modeling Aspects of Special Concretes	RA
+	> HSC, UHSC, FRC	
16.	Case Studies	
24.		
	EVALUATION AND NDT/E ASPECTS OF CONCRETE	
17.	Non Destructive Testing and Evaluation Techniques for Concrete	
18.	Evaluation, Materials, and Techniques for Concrete Repair - Causes of	
10.	distress, evaluation methods, repair materials, repair techniques, and quality	
	control methods for repair of concrete.	
19.	Petrographic Examination of Concrete	Lab
	SEM Techniques and Imaging Systems	as arranged
	Sampling, Specimen Preparation, ASTM Test Methods, Interpretation of	
	Results	
	NIH Imaging Software Application	

RA – expected Report Assignment (assigned in addition to homework assignments).

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EC FILO # 2219-5p2010-Emgt-30 Effective Year: 2010 Effective Term: Summer 🔲 Pall [7] Spring 🖾 Experimental Course Form (EC)

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

> Summer and Fall Semester Offerings - January 1 Spring Semester Offerings - August 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.

Department: Engineering Management & Systems Engineering Discipline and Course Number: ENG MGT 301

Course Title: New Product Design

Abbreviated Title (24 spaces or less): New Product Design

Instructor(s): Katie Grantham Lough

Credit Hours:

Lecture: 2.0

Lab: 1.0

Total: 3.0

Prerequisites:

лопе

Semester(s) previously taught:

Brief Course Description: (40 words or less)

Students use physical modeling to characterize a team-based inter-disciplinary design project. A prototype is built and tested to determine the effectiveness of the various modeling techniques used.

List all co-listed courses: Include 1)	a initials of Dept. Chair, if signat)	ure is not alreedy included below. 3)
4) 5		6)
Department Chair:	(Chair Signature)	Date: <u>09/34/29</u>
Discipline Specific Curricula Commit		
Curricula Committee:	(Chair Signature)	Dete:

09/29/09

Fall 🔲

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Date: 10/13/2009 10:35:20 AM

Effective Year: 2010 Effective Term: Summer 🔲

* EC File # 2220-5p2010-NE-40

Experimental Course Form (EC)

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

> Summer and Fall Semester Offerings - January 1 Spring Semester Offerings - August 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.

Department: Mining and Nuclear Engineering

Discipline and Course Number: NE401 ATTEMES

Course Title: Nuclear Medical Science

Abbreviated Title (24 spaces or less): Nuclear medical Science

Instructor(s): Hyoung Koo Lee & Bijaya Shrestha

Credit Hours:

Lecture: 3

Lab:

Total: 3

Prerequisités:

NE312, Nuclear Radiation Measurement and Spectroscopy or equivalent

Semester(s) previously taught: None

Brief Course Description: (40 words or less)

Physics and technologies involved in various radiological imaging or treatment systems in the medical field, such as digital radiography, digital mammography, computed tomography, digital image processing, feature extraction, and nuclear medicine instruments will be covered.

List all co-listed courses 1) EE 401 のとJE	: Include initials of Dep 2)	t. Chair, if signature is not 3)	already included below.
4)	5)	6)	
Department Chair:	would oken	corl	Date: <u>9~29~2</u> 9
	(Chair Signature)	•
Discipline Specific Curricula	Committee:	Chair signature)	Date: 10-19-09
Curricula Committee:			Pate;
	(c	hair Signature)	

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Date: 10/13/2009 10:35:20 AM

Effective Year: 2010

Effective Term: Summer 🛄

Fall 🔲

Spring 🖾

EC FILE # 2222-Sp 2010-AE-301

Experimental Course Form (EC)

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

Summer and Fall Semester Offerings – January 1 Spring Semester Offerings – August 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.

Department: MAE

Discipline and Course Number: AE 301

Course Title: Plasma Physics I

Abbreviated Title (24 spaces or less): Plasma Physics I

Instructor(s): Joshua L. Rovey

Credit Hours:

Lecture: 3.0

Lab:

Total: 3.0

Prerequisites:

AE/ME 231 or Physics 221 or Nuc Eng 221

Semester(s) previously taught: None

Brief Course Description: (40 words or less)

Single particle orbits in electric and magnetic fields, moments of Boltzmann equation and introduction to fluid theory. Wave phenomena in plasmas. Diffusion of plasma in electric and magnetic fields. Analysis of laboratory plasmas and magnetic confinement devices. Introduction to plasma kinetic theory.

1) ME 301 2Km	es: Include initials of De 2) NucE 301	opt. Chair, if signature is not aire Arrival 3) Phys 301	ady included below.
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Department Chair: OK	att liket	(Chair Signature)	
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Curricula Committee:	0	(Chair Signature)	Date:

10/06/09

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AE/ME/Phys/NucE 301 Plasma Physics I Spring 2010 3 Credit Hours

Instructor: J.L. Rovey, 292D Toomey Hall, Phone: 341-4613, email: roveyj@mst.edu

Class Time and Location: TBD

Office hours: TBD

Pre-requisite: AE/ME 231 or Physics 221 or Nuc Eng 221

This is a Note-Intensive Class! YOU are responsible for attending class and taking notes.

Required Text: Introduction to Plasma Physics and Controlled Fusion, Chen, Plenum Press, 1984.

Other useful References: Principles of Plasma Discharges and Materials Processing, 2nd Edition, Lieberman & Lichtenberg, John Wiley & Sons, 2005. Introduction to Physical Gas Dynamics, Vincenti & Kruger, Krieger Publishing, 1967. Plasma Physics for Nuclear Fusion, Miyamoto, MIT Press, 1980.

Course Goals:

- 1) Cover the basics of electromagnetism, gaskinetic theory, and plasma physics.
- 2) Familiarize you with different applications and areas where plasma physics is important.
- 3) Prepare you for industrial or graduate research work in the field of plasma physics.

Course Objectives: By the end of this course you should be able to

- 1) Demonstrate a working knowledge of electrostatics, electromagnetics, and charged particle motion.
- 2) Demonstrate a fundamental understanding of Debye lengths, cross-sections, collisions, velocity distributions, and adiabatic invariants.
- 3) Describe the different modes and mechanisms whereby waves influence and drive a plasma discharge.
- 4) Interpret a plasma probe diagnostic characteristic for different probe diagnostics used to interrogate plasmas

Grading:

- A 90% and above
- B 80 89 %
- C 70 79 %
- F below 70%

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Weighting:

Mid-term 30%
Homework (~ 6 HW assignments) 20%
Final Exam 50%

There are NO make-up exams. The final exam is cumulative (it covers everything). Homework will be due at the beginning of class.

Late Homework will NOT be accepted.

If I cannot read it, I will not grade it. This applies to both homework & exams.

Communication:

Please check your email daily. I also plan to use Blackboard to post HW, handouts, announcements, etc.

Academic Dishonesty: http://registrar.mst.edu/academicregs/index.html.

Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage. These rules apply!

Other Information:

If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need to request that the Disability Services staff send a letter to me verifying your disability and specifying the accommodation you will need before I can arrange your accommodation.

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AE/ME/NucE/Phys 301 Plasma Physics I

Lintroduction (1 lecture)

- A. What is a plasma?
- B. What is it good for?
- C. Course Outline

II. Single Particle Motions (7 lectures)

- A. Uniform E&B fields
- B. Non-uniform E&B fields
- C. Time varying E&B fields
- D. Adiabatic Invariant
- E. Summary

III. Plasma Fluid (7 lectures)

- A. Introduction
- B. Fluid equation of motion
- C. Drifts perpendicular to B
- D. Drifts parallel to B
- E. Plasma approximation

IV. Wayes in Plasmas

(7 lectures)

- A. Plasma oscillations
- B. Ion waves
- C. Electrostatic waves
- D. Electromagnetic waves
- E. Cutoff and resonances
- F. CMA diagram

V. Diffusion & Resistivity

(5 lectures)

- A. Diffusion & Mobility in Weakly ionized gas
- B. Diffusion across a magnetic field
- C. Single-fluid MHD Equations
- D. Bohm diffusion

VI. Equilibrium & Stability (6 lectures)

- A. Concept of Beta
- B. Diffusion of Magnetic field into plasma
- C. Two-stream instability
- D. Gravitational instability
- E. Weibel instability

VII. Kinetic Theory

(4 lectures)

- A. Distribution function
- B. Equations of Kinetic Theory
- C. Landau damping

VIII. Nonlinear Effects

(1 lectures)

A. Sheaths

IX. Applications (4 lectures)

- A. Space Propulsion
- B. Fusion
- C. Astrophysics
- D. Materials Processing

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Date: 10/23/2009 11:14:03 AM

Effective Year: 2010 Effective Term: Summer

Fall 🔲

Spring 🖾

EC File #2223-5p2010-BioSa-401

Experimental Course Form (EC)

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

> Summer and Fall Semester Offerings — January 1 Spring Semester Offerings - August 1

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Department: Bio	logical Sciences			
Discipline and Co	ourse Number: Bio	401		
Course Title: Spe	ecial Topics: Advanc	ed Nanobiotechno	logy	
Abbreviated Title	e (24 spaces or le	ss): Adv. Nanobiot	echnology	
Instructor(s): Y	ue-wern Huang			
Credit Hours:	Lecture: 2	Lab: 0	Total: 2	
Prerequisites:	Bio 211 and Bio 23	1 and graduate sta	nding	
Semester(s) pre	eviously taught: 0			
Nanotechnology h	z in lifez@eloce)is tei	ge human econom rmed nanobiotechr id includes discuss	y and society in many pology. This graduate ions of recent papers.	aspects. Applications course describes, recent
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Curricula Commit	tee:	(Chair	Signature)	Date:

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EC FILE # 2224-5p2010-Tech Com-401

Experimental Course Form (EC)

This form must be filed with the Secretary to the Campus Curricula Committee, after the

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		ind Fall Semes mester Offerin	ter Offerings – igs – August 1	January 1	
EC form must be experimental cou	or inclusion in the submitted each so irse that is require ted on one form,	emester it is to ed should be so	be offered, no ubmitted on a C	t to exceed to C form. <i>Co-l</i>	and October 1. An wo offerings. An isted offerings
School or College	:: 1111				
Department: ENG	L/TCH COM				
Discipline and Co	urse Number: TCh	COM 401	•		<i>.</i>
Course Title: Spec	cial Topics: Web-Bas	sed Communicat	tion	•	
Abbreviated Title	(24 spaces or les	s): Web-Based	Communication		
Instructor(s): Dr.	. David Wright			•	4.1
Credit Hours:	Lecture: 3	Lab:	Total: 3		
Prerequisites: r	none				
Semester(s) prev	viously taught: Spi	ing 2008			
A study of selected	cription: (40 word tools, strategies, as mmunication of tec	nd genres used t	to communicate v on.	via the World V	Wide Web.
List all co-listed of included below.	courses: Include In	itials of Dept. Ch	nair(s) and Dean((s) if signature	s are not already
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College/School D	ean:	ean Signature	SCC.	Date: 00	ct. 16,2009
UMR Curricula Co	mmittee:	hair Signature		Date:	
10/15/09	•				(Revised 2/14/2002)