



MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Formerly University of Missouri-Rolla

Agenda
Campus Curricula Committee Meeting
February 29, 2012
12 p.m. Room 117 Fulton Hall

Approval of the February 01, 2012 minutes.

Review of submitted NC forms:
NC 15, Chemical & Biological Engineering.

Review of submitted DC forms:
DC 0413, Computer Engineering, Bachelor of Science, effective Fall 2012.

DC 0414, Biological Sciences, Bachelor of Arts, effective Fall 2012.

Review of submitted CC forms:
CC 8217, Electrical Engineering 231, Control Systems, effective Fall 2012.

CC 8218, Computer Science 253, Algorithms, effective Fall 2012.

CC 8219, Computer Science 461, Privacy-Preserving Data Integration and Analysis, effective Fall 2012.

CC 8220, Computer Science 263, Introduction to Computer Security, effective Fall 2012.

CC 8222, ERP 341, Enterprise Portal Application Development, effective Fall 2012.

CC 8223, ERP 345, Use of Business Intelligence, effective Fall 2012.

CC 8224, IST 334, Advanced Networking, effective Fall 2012.

Review of submitted EC forms:
EC 2396, Geological Engineering 401, Advanced Geophysical Field Methods, effective Summer 2012.

EC 2397, Nuclear Engineering 401, Radiation Transport and Modeling, effective Fall 2012.



MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

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EC 2398, Electrical Engineering 401, Neural Network Control of Nonlinear Continuous-time Systems, effective Fall 2012.

EC 2399, Electrical Engineering 401, Discrete-time Neural Network Control, effective Fall 2013.

EC 2400, Electrical Engineering 401, Adaptive Control, effective Spring 2014.

EC 2401, Computer Science 401, Search-Based Software Engineering, effective Fall 2012.

EC 2402, Business 301, Using Business Models, effective Fall 2012.

EC 2403, Finance 301, Derivative Markets I, effective Fall 2012.

Tabled Items:

CC 8185, Geology 344, Remote Sensing Technology, effective Fall 2012. **Tabled**

NC # 15-2011-Chem+BioEng.

Name Change Form (NC)

This form is to be used to propose a change in name for a department.

This form should be submitted through the appropriate Discipline Specific Curricula Committee, then to the Campus Curricula Committee, where it will also be referred to the Campus Budgetary Affairs Committee.

Department - Present: Chemical & Biological Engineering
Proposed: Chemical & Biochemical Engineering

Discuss the rationale for this name change. In particular, address the financial and curricular implications. Please attach a separate sheet(s) to address the following questions.

- 1) To what extent does the name change have the support of the faculty of the academic unit involved?
- 2) What are the anticipated positive and negative effects to the affected academic unit, as well as to the rest of the campus?
- 3) Does the name change imply a new program, or the expansion of an existing one?
- 4) Will the name change require new resources or the redistribution of existing ones (faculty, labs, E&E, etc.)?

Recommended by Department:  Date: 12/9/11
(Chair signature)

Recommended by Discipline Specific Curricula Committee:  Date: 2/1/12
(Chair signature)

Approved by Curricula Committee: _____ Date: _____
(Chair signature)


Approved by Faculty Senate: _____ Date: _____
(Chair signature)

- 1.) All faculty members support the change including our Advisory Board.
- 2.) There is a positive effect since the proposed name reflects the actual activities that the department has. The present name has a negative effect since it reflects biological engineering for which we do not have much activities in both teaching and research.
- 3.) It does not imply any new or expansion program rather it reflects the department teaching programs and research activities.
- 4.) No.



MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Formerly University of Missouri-Rol

MEMO TO: Curricula Committee
FROM: 
Robert Schwartz, Interim Provost
DATE: December 14, 2011
RE: Name Change for Chemical & Biological Engineering

This memo is to confirm that I am in agreement with the request from Chemical and Biological Engineering to change their name to Chemical and Biochemical Engineering. This is a name change only and they are not making any changes to the degree. The new name better reflects the more active department teaching programs and research activities.

RWS/krc

Office of the Provost and Executive Vice Chancellor for Academic Affairs

204 Parker Hall • 300 West 13th Street • Rolla, MO 65409-0830

Phone: 573-341-4138 • Fax: 573-341-6777 • Email: rschwartz@mst.edu • Web: www.mst.edu

An equal opportunity institution

Huffman, Angie L.

From: Albrecht, Marlene N
Sent: Tuesday, January 17, 2012 11:16 AM
To: Al-Dahhan, Muthanna H.
Cc: Watkins, Steve E.; Huffman, Angie L.
Subject: RE: Curricula Forms

May 11, 2011 at the faculty meeting. Dr. Al Dahhan stated that he had talked to the Advisory Council and they were in agreement with the name change so the department would go forward this the name change.

Marlene Albrecht
Administrative Assistant
Missouri University of Science & Technology
Chemical & Biological Engineering
143 Schrenk Hall
400 W. 11th Street
Rolla, MO 65409-1230
Tele: 573-341-4415
Fax: 573-341-4377
Email: marlene@mst.edu

From: Al-Dahhan, Muthanna H.
Sent: Tuesday, January 17, 2012 11:12 AM
To: Albrecht, Marlene N
Cc: Watkins, Steve E.; Huffman, Angie L.
Subject: Re: Curricula Forms

Also there is another follow up meeting with faculty in May, I think May 10,
Thanks

Dr. Muthanna Al-Dahhan
Sent from my iPhone

On Jan 17, 2012, at 8:38 AM, "Albrecht, Marlene N" <marlene@mst.edu> wrote:

Here are the dates that you requested.

Faculty Retreat – 9-7-2010

Advisory Council – 4-14-2011

Marlene Albrecht

Administrative Assistant

Effective Year: ~~2011~~ 2012

DC # 0413-2012-CpEng-000-00

Effective Term: Summer ☐ Fall ☒ Spring ☐
(Creating or modifying a degree program must be effective for a Fall term)

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:
Computer Engineering B.S. program

Department: Electrical and Computer Engineering

Briefly describe action requested (Attach documentation as appropriate):

Change the Mathematics Elective to:
Students must take one 200- or 300-level Math course or Cp Sc 228 which requires a Math 15 (or equivalent) prerequisite, except special problems (Math 200 or Math 300).

The current Mathematics Elective is:
Students must take Math 203, 208, 305, 307, 309, 315, 322, 325, 330, 351, 383, or Cp Sc 228.

Recommended by Department: Kelvin Escobar
(Chair signature)

Date: 1/10/12

Recommended by: Steve Watkins
Discipline Specific Curricula Committee (Chair signature)

Date: 2/1/12

Approved by Curricula Committee: _____
(Chair signature)

Date: _____

Approved by Faculty Senate: _____
(Chair signature)

Date: _____

DC # 0414-2012-BioSci-000-00

Effective Year: 2012

Effective Term: Summer ☐ Fall ☒ Spring ☐
(Creating or modifying a degree program must be effective for a Fall term)

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:

B.A. Biology, Secondary Education Emphasis

Department: Biological Sciences**Briefly describe action requested (Attach documentation as appropriate):**

Changes are being proposed to the B.A. Biology Secondary Education Emphasis to:

1) make coursework more consistent with state (DESE, MO Dept. of Elementary and Secondary Education) requirements, and

2) reduce the total credit hours from 137 to 131 by bringing the some B.A. Secondary Ed requirements more in line with the straight B.A. requirements.

Attachment A shows the differences between the current and proposed curricula along side the DESE-defined area of "Biology and Other Sciences" and the proposed changes are summarized at the bottom.

Attachment B shows the differences between the straight B.A. Biology and the B.A. Biology Secondary Education Emphasis and the proposed changes are summarized at the bottom.

Attachment C highlights the changes as they would appear in the Undergraduate Catalog.

Recommended by Department: BSA Aronson
(Chair signature)Date: 1/17/12Recommended by: Daniel Laub
Discipline Specific Curricula Committee (Chair signature)Date: 2/2/2012Approved by Curricula Committee: _____
(Chair signature)

Date: _____

Approved by Faculty Senate: _____
(Chair signature)

Date: _____

(Revised 1/31/2008)

01/16/12

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Attachment A

1) Coursework currently does not match DESE requirements

DESE Biology Requirements

a. History/Philosophy of Science

b. 20 hours in Biology:

- 1) Cell Biology
- 2) Plant Form and Function
- 3) Animal Form and Function
- 4) Genetics
- 5) Evolution
- 6) Biology Electives

Current B.A. Secondary Ed

Hist 275 History of Sci

BIO 211/212 Cell Biol	4
BIO 218 Plant Biol	3
BIO 113/114 Biodiversity	4
BIO 231 Genetics	3
BIO 113/114 Biodiversity	3
BIO 102 Intro to BioSci	1
BIO 111/112 Prime Biol	5
BIO 251 Ecology	3
BIO 310 Senior Seminar	1
BIO elective	3

Total Biology

30

DESE Biology Requirements

a. History/Philosophy of Science

b. 20 hours in Biology:

- 1) Cell Biology
- 2) Plant Form and Function
- 3) Animal Form and Function
- 4) Genetics
- 5) Evolution
- 6) Biology Electives

Proposed B.A. Secondary Ed

Hist 275 History of Sci

BIO 211/212 Cell Biol	4
BIO 111/112, 113/114 Prime Biol, Biodiversity	9
BIO 231 Genetics	3
BIO 235 Evolution	3
BIO 102 Intro to BioSci	1
BIO 310 Senior Seminar	1

Total Biology

30

c. 10 additional hours in Science:

1) Chemistry	Chem 1, 2, 3, 4, 221, 223	17
2) Physics	Physics 6/8 Env Physics	4
3) Earth Science		
4) Environmental Science		

c. 10 additional hours in Science:

1) Chemistry	Chem 1, 2, 3, 4, 221, 223	17
2) Physics	Physics 31 College Phys	3
3) Earth Science	BIO 151 Intro Env Sci	3
	BIO 251 Ecology	3
	Geol 51 Phys Env Geol	3
4) Environmental Science	BIO 151 Intro Env Sci	

Proposed changes:

Eliminate:

BIO 218
BIO any
Physics 6/8

Add:

BIO 151
BIO 235
Physics 31
Geol 51

Attachment B

2)

137 total hours

Current

B.A. Biology Secondary Ed Emphasis

B.A. Biology

Humanities:

Engl 20 3
Engl 60 3
1 literature course 3
1 philosophy course 3
1 fine arts course 3
Humanities elective 3

Engl 20 3
Engl 60 3
1 literature course 3
1 philosophy course 3
2 fine arts courses 6

Social Sciences:

Hist 11/1/12 6
4 courses in at least 2 areas: 12
PolSci
Psychology
Economics

Social Sciences:

Hist 11/1/12 6
PolSci 90 3
Psychology (TEP*) 12
Hist 175 or 176 3

Speech 85 (TEP*) 3

* S&T Teacher Education Program requirement

Proposed changes:

Allow: Speech 85 to count as Humanities

Eliminate:

1 fine arts course
Hist 175 or 176 requirement

Attachment C

old catalog entry

**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 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: 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 Sc 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)

Attachment C, continued**Bachelor of Arts
Biological Sciences
Secondary Education Emphasis Area
Degree Requirements****proposed entry**

A degree in this emphasis area requires 131 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: 18 semester hours

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

Social Sciences: 15 semester hours

History 111 (3 hours), History 112 (3 hours), ~~History 175 or 176 (3 hours)~~, History 275 (3 hours), Political Science 90 (3 hours), Psychology 50 (3 hours)

Mathematics/Physical Science: 9 semester hours

Math 3 (3 credits)
Physics 31 (3 credits)
Geology 51 (3 credits)

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: 27 semester hours

Bio Sc 102 (1 hour), Bio Sc 111/112 (5 hours), Bio Sc 113/114 (4 hours), Bio Sc 151 (3 hours), Bio Sc 211/212 (4 hours), ~~Bio Sc 248 (3 hours)~~, Bio Sc 231 (3 hours), Bio Sc 235 (3 hours), Bio Sc 251 (3 hours), ~~History 275 (3 hours)~~, Bio Sc 310 (1 hour)

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)

Effective Year: FS2012

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.)

1. Department: Electrical & Computer Engineering

2. Discipline and Course Number: Present : EE 231

Proposed:

3. Course Title: Present: Control Systems

Proposed:

Abbreviated Course Title: Control Systems

(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (40 Words or Less)

Present: Formulation of the control problem, system equations and models, frequency, time, and state space analysis and design of linear control systems.

Proposed:

5. If course requires field trip check box: ☐

6. Credit Hours:	Present:	Lecture: 3	Lab:	Total: 3
	Proposed:	Lecture:	Lab:	Total:

7. Prerequisites:

Present: Elec Eng 217 with a grade of "C" or better

Proposed: Elec Eng 153 and Math 204 each with grade of "C" or better; passing the Elec Eng Advancement Exam II.

8. Required for Majors: ☐ Elective for Majors: ☒

9. Justification: Modification to Undergraduate EE Requirements per ECE Faculty 1/12/2012.

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

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1)

2)

3)

4)

5)

6)

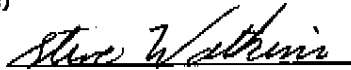
Recommended by Department



(Chair signature)

Date: 17 Jan 2012

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Date: 2/1/12

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

Effective Year: 2012

Term: Summer ☐ Fall ☒ Spring ☐

CC File # 8218-2012-19-253-34

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)New Course ☐Course Deletion ☐Credit Hours ☐Prerequisites ☐Course Title ☐Catalog Description ☒Course Number ☐Co-listing ☐**Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Computer Science

2. Discipline and Course Number: Present: CmpSc 253 Proposed:

3. Course Title: Present: Algorithms
Proposed:**Abbreviated Course Title:**

(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present: Students will work to solve recurrence relations, analyze algorithms for correctness and time and space complexity, develop strategies for dynamic programming and greedy algorithms, create fundamental computing algorithms for shortest-path, minimal spanning trees, maximum flow, and hard problems.

Proposed: Students will solve recurrence relations, analyze algorithms for correctness and time/space complexity, apply these analysis techniques to fundamental dynamic programming, greedy, shortest-path, minimal spanning trees, and maximum flow algorithms and validate these analyses through programming.

5. If course requires field trip check box: ☐6. Credit Hours: Present: Lecture: 3 Lab: 0 Total: 3
Proposed: Lecture: Lab: Total:

7. Prerequisites:

Present: CmpSc 128, CmpSc 153, preceded or accompanied by Calculus I

Proposed:

8. Required for Majors: ☒ Elective for Majors: ☐

9. Justification: Change catalog description to match course offering practice over the last 20 years.

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

11. List all co-listed courses, Initialed by Dept. Chair, if signature does not appear below.

1) 2) 3)

4) 5) 6)

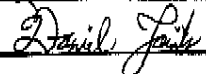
Recommended by Department



(Chair signature)

Date: Jan 13, 12

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Date: 2/2/2012

Approved by Curricula Committee:

(Chair signature)

Date:

Approved by Faculty Senate:

(Chair signature)

Date:

CC File # 8219-2012-CS-461-10

Effective Year: 2012

Term: Summer ☐ Fall ☒ Spring ☐**Course Change Form (CC)**

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)New Course ☒Course Deletion ☐Credit Hours ☐Prerequisites ☐Course Title ☐Catalog Description ☐Course Number ☐Co-listing ☐**Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Computer Science

2. Discipline and Course Number: Present : CmpSc 401

Proposed: CmpSc 461

3. Course Title: Present:

Proposed: Privacy-Preserving Data Integration and Analysis

Abbreviated Course Title: Secure Data Analysis

(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present:

Proposed: This course covers basic tools, in statistics and cryptography, commonly used to design privacy-preserving and secure protocols in a distributed environment as well as recent advances in the field of privacy-preserving data analysis, data sanitization and information retrieval.

5. If course requires field trip check box: ☐

6. Credit Hours:

Present:

Lecture:

Lab:

Total:

Proposed:

Lecture: 3

Lab: 0

Total: 3

7. Prerequisites:

Present: CmpSc 338 and CmpSc 262

Proposed: CmpSc 325

8. Required for Majors: ☐ Elective for Majors: ☒

9. Justification: This course has been successfully offered twice: Fall 2010 and Fall 2011. We would like to make it a regular graduate course. In addition, the analytical skills taught in CmpSc 325 provide the appropriate foundation for this course.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): FS2010, FS2011

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1) 2) 3)

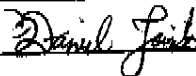
4) 5)

Recommended by Department



(Chair signature)

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Approved by Curricula Committee:

(Chair signature)

Approved by Faculty Senate:

(Chair signature)

Date: Jan 25, 12

Date: 2/2/2012

Date: _____

Date: _____

(Revised 1/29/09)

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CC File # 8220-2012-CS-263-32

Effective Year: 2012

Term: Summer ☐ Fall ☒ Spring ☐**Course Change Form (CC)**

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)New Course ☐Course Deletion ☐Credit Hours ☐Prerequisites ☒Course Title ☐Catalog Description ☐Course Number ☐Co-listing ☐**Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Computer Science

2. Discipline and Course Number: Present: CmpSc 263

Proposed:

3. Course Title: Present: Introduction to Computer Security

Proposed:

Abbreviated Course Title:

(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present: This course encompasses threats and vulnerabilities, trust and security policies, and enforcement. Specific topics include access control, risk management, systems and applications life cycle, physical security, key management, transmission security, and cryptography.

Proposed:

5. If course requires field trip check box: ☐6. Credit Hours: Present: Lecture: 3 Lab: 0 Total: 3
Proposed: Lecture: Lab: Total:

7. Prerequisites:

Present: At least Sophomore standing

Proposed: CmpSc 253

8. Required for Majors: ☐ Elective for Majors: ☒

9. Justification: The course covers some basic number theories, public and private key encryption schemes and basic concepts in information flow. Based on the course assessment, to better understand these topics, the students need to know algorithm design, complexity analysis and some graph theories. CmpSc 253 will provide the needed foundation for this course.

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

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1) 2) 3)

4) 5) 6)

Recommended by Department

(Chair signature)

Date: Jan 25, 12

Recommended by Discipline Specific Curricula Committee

(Chair signature)

Date: 2/2/2012

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

(Revised 1/29/09)

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Effective Year: 2012

CC File # 8222-2012-ERP-341-10

Term: Summer ☐ Fall ☒ Spring ☐

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

New Course ☒ Course Deletion ☐ Credit Hours ☐ Prerequisites ☐
 Course Title ☐ Catalog Description ☐ Course Number ☐ Co-listing ☐

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business and Information Techn

2. Discipline and Course Number: Present :

Proposed: ERP 341

3. Course Title: Present:

Proposed: Enterprise Portal Application Development

Abbreviated Course Title: Enterprise Portal

(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present:

Proposed: This course provides a conceptual foundation and hands on experience in web based applications development deployed through an Enterprise Portal platform. SAP Netweaver Enterprise Portal and tools including Visual Composer and Web Dynpro will be used to develop the applications.

5. If course requires field trip check box: ☐

6. Credit Hours:	Present:	Lecture: 3.0	Lab:	Total: 3.0
	Proposed:	Lecture:	Lab:	Total:

7. Prerequisites:

Present:

Proposed: Programming knowledge and (ERP 246 or preceded or accompanied by ERP 346).

8. Required for Majors: ☐ Elective for Majors: ☒

9. Justification: Has been taught twice as a 301 course.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): Sp11, Sp12

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1) 2) 3)

4) 5) 6)

Recommended by Department

Caroline Fisher
(Chair signature)

Date: 2/2/12

Recommended by Discipline Specific Curricula Committee

Dave Schubert
(Chair signature)

Date: 2/2/12

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

(Revised 1/29/09)

Effective Year: FS2012

CC File # 8223-2012-ERP-345-32

Term: Summer ☐ Fall ☒ Spring ☐

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

New Course ☐Course Deletion ☐Credit Hours ☐Prerequisites ☒Course Title ☐Catalog Description ☐Course Number ☐Co-listing ☐

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business & Info Tech

2. Discipline and Course Number: Present : ERP 345

Proposed:

3. Course Title: Present: Use of Business Intelligence

Proposed:

Abbreviated Course Title: Business Intelligence

(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present: This course introduces data-oriented techniques for business intelligence. Topics include Business Intelligence architecture, Business Analytics, and Enterprise Reporting. SAP Business Information Warehouse, BusinessObjects, or similar tools will be used to access and present data, generate report

Proposed:

5. If course requires field trip check box: ☐

6. Credit Hours:

Present:

Lecture: 3.0

Lab:

Total: 3.0

Proposed:

Lecture:

Lab:

Total:

7. Prerequisites:

Present: ERP 246 or preceded or accompanied by ERP 346

Proposed: (IST 223 or equivalent) and (ERP 246 or preceded or accompanied by ERP 346)

8. Required for Majors: ☐Elective for Majors: ☒

9. Justification: Database knowledge is required for this course.

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

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1)

2)

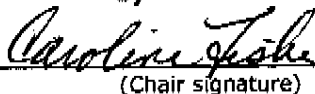
3)

4)

5)

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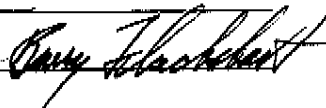
Recommended by Department



(Chair signature)

Date: 2/2/12

Recommended by Discipline Specific Curricula Committee



(Chair signature)

Date: 2/2/12

Approved by Curricula Committee:

(Chair signature)

Date: _____

Approved by Faculty Senate:

(Chair signature)

Date: _____

Effective Year: 2012

CC File # 8224-2012-IST-334-10

Term: Summer ☐ Fall ☒ Spring ☐

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

New Course ☒ Course Deletion ☐ Credit Hours ☐ Prerequisites ☐
 Course Title ☐ Catalog Description ☐ Course Number ☐ Co-listing ☐

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Business and Information Techn

2. Discipline and Course Number: Present :

Proposed: IST 334

3. Course Title: Present:

Proposed: Advanced Networking

Abbreviated Course Title: Advanced Networking

(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present:

Proposed: This course focuses on the ability to plan, implement, verify, and troubleshoot LANs and WANs in large-scale enterprises. Topics include advanced IP addressing and routing protocols, IPv6, VLANs, network security, wireless and VoIP extensions, network performance, and multi-protocol networks.

5. If course requires field trip check box: ☐

6. Credit Hours:	Present:	Lecture: 3	Lab:	Total: 3
	Proposed:	Lecture:	Lab:	Total:

7. Prerequisites:

Present:

Proposed: IST 321 or equivalent

8. Required for Majors: ☐ Elective for Majors: ☒

9. Justification: Taught previously as 301:
 F10: Special Networking Topics.
 F11: Advanced Networking.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): F10. F11

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1) 2) 3)

4) 5) 6)

Recommended by Department Caroline Fisher

(Chair signature)

Date: 2/2/12Recommended by Discipline Specific Curricula Committee Rory Flaherty

(Chair signature)

Date: 2/2/12

Approved by Curricula Committee: _____

(Chair signature)

Date: _____

Approved by Faculty Senate: _____

(Chair signature)

Date: _____

(Revised 1/29/09)

EC File # 2396-FS2012-GE-401

Effective Year: 2012

Effective Term: Summer ☒ Fall ☐ 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: GSE

Discipline and Course Number: GE 401

Course Title: Advanced Geophysical Field Methods

Abbreviated Title (24 spaces or less): Advanced Field Methods

Instructor(s): Anderson

Credit Hours: Lecture: 1 Lab: 2 Total: 3

Prerequisites: Graduate standing

Semester(s) previously taught: none

Brief Course Description: (40 words or less)

Geophysical field data will be acquired by registrants at selected study sites with the objective of imaging the shallow subsurface and built structures. Registrants will process and interpret the acquired geophysical data using commercial state-of-the-art geophysical processing and interpretational software. Interpretations will be constrained using borehole control and/or construction plans, as available. *Continuing Ed.*

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

1) ~~GEOPH~~ 2) 3)
4) 5) 6)

Department Chair: *Ralph J. [Signature]* Date: 1-5-12
(Chair Signature)

Discipline Specific Curricula Committee: *Steve [Signature]* Date: 2/1/12
(Chair signature)

Curricula Committee: _____ Date: _____
(Chair Signature)

Effective Year: 2012

Effective Term: Summer ☐ Fall ☒ Spring ☐

EC File # 2397-FS2012-NE-401

Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved SP2009 or later allow the course to be offered twice at any time during the following three year period. After an experimental course has been offered twice, a CC form may be submitted to request a permanent course number.

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

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

Department: Mining and Nuclear Engineering

Discipline and Course Number: NE401

Course Title: Radiation Transport and Modeling

Abbreviated Title (24 spaces or less): Rad Trans Modeling

Instructor(s): Xin Liu

Credit Hours: Lecture: 3 Lab: Total: 3

Prerequisites: NE303 or equivalent

Semester(s) previously taught: None

Brief Course Description: (40 words or less)

Experiment data and error analysis techniques including mathematical modeling; Monte Carlo simulation of radiation transport problems pertinent to radiation shielding, medical physics, and health physics using advanced Monte Carlo simulation codes, such as MCNPX or Geant4.

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

1) 2) 3)
4) 5) 6)

Department Chair: Arvind Kumar
(Chair Signature)

Date: 1-13-2012

Discipline Specific Curricula Committee: Steve Wathen
(Chair signature)

Date: 2/1/12

Curricula Committee: _____
(Chair Signature)

Date: _____

Effective Year: 2012

Effective Term: Summer ☐ Fall ☒ Spring ☐

EC File #2398-PS2012-EE-401

Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved SP2009 or later allow the course to be offered twice at any time during the following three year period. After an experimental course has been offered twice, a CC form may be submitted to request a permanent course number.

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

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

Department: Electrical & Computer Engr

Discipline and Course Number: EE 401

Course Title: Neural Network Control of Nonlinear Continuous-time Systems

Abbreviated Title (24 spaces or less): Neural Network Control

Instructor(s): J. Sarangapani

Credit Hours: Lecture: 3 Lab: Total: 3

Prerequisites: EE 431 or Consent of the Instructor

Semester(s) previously taught: None

Brief Course Description: (40 words or less)

Neural network topologies, universal function approximation property, background on Lyapunov stability and dynamic systems, control of a class of nonlinear systems and robot manipulators, feedback linearization, backstepping control, force control, neural observers, decentralized neural network control, neural network-based optimal control and applications

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

1) 2) 3)

4) 5) 6)

Department Chair: Kelvi Enuk
(Chair Signature)

Date: 24 Jan 2012

Discipline Specific Curricula Committee: Steve Watkins
(Chair signature)

Date: 2/1/12

Curricula Committee: _____
(Chair Signature)

Date: _____

EC File # 2400-SP2018-EE-401

Effective Year: 2012

Effective Term: Summer ☐ Fall ☒ Spring ☐

EC File # 2401-FS2012-CS-401

Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved SP2009 or later allow the course to be offered twice at any time during the following three year period. After an experimental course has been offered twice, a CC form may be submitted to request a permanent course number.

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

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

Department: Computer Science

Discipline and Course Number: CmpSc 401

Course Title: Search-Based Software Engineering

Abbreviated Title (24 spaces or less): Search-Based Soft. Eng.

Instructor(s): Marouane Kessentini

Credit Hours: Lecture: 3 Lab: 0 Total: 3

Prerequisites: CmpSc 347 or CmpSc 348; CmpSc 206

Semester(s) previously taught: None

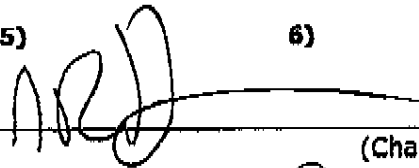
Brief Course Description: (40 words or less)

This course will introduce students to reformulating software engineering problems from the life-cycle, requirements engineering to testing and evolution, as search problems by adapting different meta-heuristic search algorithms. Topics covered during this course include evolutionary testing, cost/effort prediction, multi-objective software management, and requirements validation.

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

1) 2) 3)
4) 5) 6)

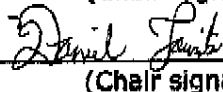
Department Chair:



(Chair Signature)

Date: Jan 23, 12

Discipline Specific Curricula Committee:



(Chair signature)

Date: 2/2/2012

Curricula Committee:

(Chair Signature)

Date: _____

Effective Year: 2012

EC File # 2402-FS2012-BUS-301

Effective Term: Summer ☐ Fall ☒ Spring ☐

Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved SP2009 or later allow the course to be offered twice at any time during the following three year period. After an experimental course has been offered twice, a CC form may be submitted to request a permanent course number.

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

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

Department: Business & Info Tech

Discipline and Course Number: BUS 301

Course Title: Using Business Models

Abbreviated Title (24 spaces or less): Using Business Models

Instructor(s): Ralph Hanke

Credit Hours: **Lecture:** 3 **Lab:** 0 **Total:** 3

Prerequisites: Senior Standing.

Semester(s) previously taught:

Brief Course Description: (40 words or less)

Developing entrepreneurship skills and attitudes through Business Model application. Developing skills in both oral and written professional business presentations. Working effectively in teams to develop entrepreneurially oriented research and product development skills. Mastering the ability to deal with ambiguity and uncertainty working with scalable actual products and services.

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

1) 2) 3)

4) 5) 6)

Department Chair: _____ *Caroline Fisher* _____

(Chair Signature)

Date: 2/2/12

Discipline Specific Curricula Committee: _____ *Dany Thaddeus* _____

(Chair signature)

Date: 2/2/12

Curricula Committee: _____

(Chair Signature)

Date: _____

Effective Year: 2012

EC File # 2403-FS2012-FIN-301

Effective Term: Summer ☐ Fall ☒ Spring ☐

Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved SP2009 or later allow the course to be offered twice at any time during the following three year period. After an experimental course has been offered twice, a CC form may be submitted to request a permanent course number.

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

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

Department: Bus and Info Tech

Discipline and Course Number: FIN 301

Course Title: Derivative Markets I

Abbreviated Title (24 spaces or less): Derivative Markets I

Instructor(s): Hilgers

Credit Hours: Lecture: 3.0 Lab: Total: 3.0

Prerequisites: Math 12 or Math 15 or Math 21, Stat 211 or Stat 213 or Stat 215 or Stat 217 or Stat 343

Semester(s) previously taught:

Brief Course Description: (40 words or less)

The fundamentals of quantitative pricing of equity-based financial derivatives such as forwards, futures, vanilla, exotic and path-dependent options using methods based on risk-free portfolios of random assets. Black-Scholes theory is developed. Spreadsheets and mathematical software packages are used for valuation.

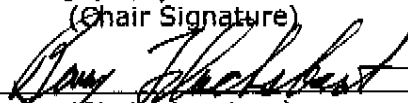
List all co-listed courses: Include initials of Dept. Chair, if signature is not already included below.

1) 2) 3)

4) 5) 6)

Department Chair: _____  _____
(Chair Signature)

Date: 2/2/12

Discipline Specific Curricula Committee: _____  _____
(Chair signature)

Date: 2/2/12

Curricula Committee: _____
(Chair Signature)

Date: _____

Effective Year: 2012

Term: Summer ☐ Fall ☒ Spring ☒

CC File # 8185-2011-Geol-344-32

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

New Course ☐ Course Deletion ☐ Credit Hours ☐ Prerequisites ☒
Course Title ☐ Catalog Description ☐ Course Number ☐ Co-listing ☐

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Geological Sciences and Eng

2. Discipline and Course Number: Present : Geo 344

Proposed:

3. Course Title: Present: Remote Sensing Technology

Proposed:

Abbreviated Course Title:

(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present:

Proposed:

5. If course requires field trip check box: ☐

6. Credit Hours: Present: Lecture: 2.0 Lab: 1.0 Total: 3.0
Proposed: Lecture: Lab: Total:

7. Prerequisites:

Present: Geo 248

Proposed: Geo 51 or Geo 52 or GeoEng 50

8. Required for Majors: ☒ Elective for Majors: ☐

9. Justification: Geo 248 "Fundamentals of GIS" course deals with vector-oriented analysis whereas Geo 344 deals with raster data, aerial photography and orbital remote sensing data. Only fundamental knowledge of introductory geology is needed.

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) GEO ENG 344 - 2) INS ? 3)

4) 5) 6)

Recommended by Department: [Signature] (Chair signature)

Date: 9/22/11

Recommended by Discipline Specific Curricula Committee: [Signature] (Chair signature)

Date: 10/28/2011

Approved by Curricula Committee: _____ (Chair signature)

Date: _____

Approved by Faculty Senate: _____ (Chair signature)

Date: _____

(Revised 1/29/09)