MISSOURI S&T

MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Formerly University of Missouri-Rolla

Minutes
Campus Curricula Committee Meeting
October 3, 2012
12 p.m., Room 117 Fulton Hall

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

The following curriculum forms were discussed and approved:

Degree Change Forms:

DC #0421	DC #0425	DC #0427
DC #0424	DC #0426	DC #0428

Course Change Forms:

CC #8232	CC #8253	CC #8268
CC #8245	CC #8254	CC #8271
CC #8246	CC #8255	CC #8272
CC #8247	CC #8256	CC #8274
CC #8248	CC #8257	CC #8275
CC #8249	CC #8260	CC #8276
CC #8250	CC #8261	CC #8277
CC #8251	CC #8266	CC #8278
CC #8252	CC #8267	CC #8279

Experimental Course Forms:

EC #2414	EC #2420	EC #2426
EC #2415	EC #2421	EC #2428
EC #2416	EC #2422	EC #2429
EC #2417	EC #2423	EC #2441 (CC #8259)
EC #2418	EC #2424	
EC #2419	EC #2425	

The committee voted to table the items below for further action/clarification to be provided by the academic department responsible for each:

DC #0417, Engineering Management, Bachelor of Science.

DC #0419, Engineering Management, Bachelor of Science, Industrial Engineering Emphasis.

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DC #0420, Engineering Management, Bachelor of Science, General Emphasis.

DC #0429, Engineering Management, Bachelor of Science.

The following forms were withdrawn from consideration:

CC #8258, Mining Engineering 408, Belt Conveying In Mines.

CC #8262, Marketing 350, Customer Focus and Satisfaction.

CC #8263, Business 350, Customer Focus & Satisfaction.

CC #8264, Business 450, Advanced Customer Focus & Satisfaction.

CC #8265, Marketing 450, Advanced Customer Focus and Satisfaction.

The Registrar's Office is still studying the viability of expanding the character limit of the course description field on EC and CC forms by 20%. Minor changes have been made to the DC, CC, EC, and NC forms and revised forms will be posted to the website.

The meeting adjourned at 1:20 p.m.

Daniel Tauritz

Daniel Tauritz, Chair
Missouri S&T Campus Curricula Committee

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Effective Year: ~~2012~~ 2013
Effective Term: Summer ☐ **Fall** xx☐ **Spring** ☐
(Creating or modifying a degree program must be effective for a Fall term)

DC # 0421-2012-Emgt-000-00

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:
Minor in Engineering Management

Department: EMSE

Briefly describe action requested (Attach documentation as appropriate):
Replace Emgt 352 – Financial Decision Analysis, with Emgt 147 – Engineering Accounting and Finance as one of the three required courses for the minor in Engineering Management. Emgt 352 – Financial Decision Analysis is no longer being offered by the department. Emgt 147 provides the appropriate knowledge for the minor in Engineering Management.

Current Minor course requirements: Eng Mgt 134, 253, 352, and Eng Mgt 300 or 200 level course work (6 hours) chosen in consultation with minor advisor.

Proposed Minor in Eng Mgt course requirements: Eng Mgt 134, 253, ~~147,~~ 147, and Eng Mgt 300 ~~or 200~~ 200 or level course work (6 hours) chosen in consultation with minor advisor.

Recommended by Department: David Enke (Chair signature) Date: 3/28/12

Recommended by: Stephen Kapp (Chair signature) Date: 8/26/12
Discipline Specific Curricula Committee

Approved by Curricula Committee: Daniel Fain (Chair signature) Date: 10/5/2012

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

DC # 0424-2012-Math-000-00

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

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:
B.S. in Applied Mathematics

Department: Mathematics and Statistics

Briefly describe action requested (Attach documentation as appropriate):
We would like to make the following changes:

(1) Wherever Econ 321 or Finance 350 appears in our requirements, use Math 337 instead.
(2) Amend the Math/Stat elective requirements as follows:

Current: (1) Math 305, 306, 307, 308; (2) Math 315, 330, 351, 385; (3) Math 302, 303, 322, 325, 351, 383; (4) Stat 343, 344, 346, 353; (5) Cmp Sc 228, 328, 329, Stat 346, Math 303, Econ 321.

Proposed: (1) Math 305, 306, 307, 308; (2) Math 305, 315, 330, 351, 385; (3) Math 302, 303, 322, 325, 351, 383; (4) Stat 314, 343, 344, 346, 353, 355, 356; (5) Cmp Sc 228, 328, 329, Stat 314, 346, 355, 356, Math 303, 337.

Item (1) references catalog (Econ 321) and DAR (Finance 350).

Recommended by Department: Leon Hall (Chair signature) Date: 4/30/2012

Recommended by: Daniel Faint (Chair signature) Date: 9/27/2012
Discipline Specific Curricula Committee

Approved by Curricula Committee: Daniel Faint (Chair signature) Date: 10/5/2012

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

(Revised 9/12/2011)

04/30/12

April 26, 2012

Justification for Changes to Applied Mathematics Curriculum

(1) Wherever Econ 321 or Finance 350 appear in our requirements, use Math 337 instead.

Rationale: In the 2005-2006 Undergraduate Catalog, the class Econ 321 (Finance) is listed with a prerequisite of Econ 221 or 222. Starting with the 2006-2007, the course Finance 350 (Corporate Finance II) has the same description that used to apply to Econ 321 but with a prerequisite of Finance 250, which is taken by hardly any of our majors. We began using the course Math/Econ 337 (Financial Mathematics) in place of the requirement that is still listed as Econ 321 in the catalog and as Finance 350 on the CAPS reports, which required a Substitution and Waiver form for each instance. This change will update the curriculum to reflect the current course offerings.

(2) Amend the math/stat elective requirements as follows:

Current: (1) Math 305, 306, 307, 308; (2) Math 315, 330, 351, 385; (3) Math 302, 303, 322, 325, 351, 383; (4) Stat 343, 344, 346, 353; (5) Cmp Sc 228, 328, 329, Stat 346, Math 303, Econ 321.

Proposed: (1) Math 305, 306, 307, 308; (2) Math 305, 315, 330, 351, 385; (3) Math 302, 303, 322, 325, 351, 383; (4) Stat 314, 343, 344, 346, 353, 355, 356; (5) Cmp Sc 228, 328, 329, Stat 314, 346, 355, 356, Math 303, 337.

(Note: students must select two groups and take two courses within each group.)

Rationale: The change from Econ 321 to Math 337 has been discussed previously. The inclusion of additional courses in Group 4 (statistics) and Group 5 (computational and applied mathematics) is intended to increase flexibility without decreasing rigor. Although it appears that Group 5 is being broadened a bit, the new offerings are in the spirit of a grouping that originally included Econ 321.

Group 2 is usually described as consisting of pure math classes that would be good preparation for a student planning graduate study. Abstract algebra is an excellent option for students considering graduate study (in fact, many schools with a less applied orientation require abstract algebra in the same way that we require advanced calculus). Inclusion in Group 2 would highlight that fact and give students an additional option.

Department of Mathematics and Statistics • 202 Rolla Building • 400 W. 12th St. • Rolla, MO 65409-0020
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350 Customer Focus and Satisfaction (LEC 3.0) Major emphasis is given to the concept of customer focus, with coverage of techniques for obtaining customer needs, measuring customer satisfaction, developing products and services to satisfy customers, and maximizing the benefits of customer feedback. A semester long HaQ project will be done. Prerequisite: MKT 311 or MKT 307 or Eng Mgt 251. (Co-listed with Bus 350)

380 Marketing Strategy (LEC 3.0) Identification and analysis of strategic managerial marketing issues. Integration of marketing concepts through theoretical overview and practical analysis, including extensive use of simulation. Prerequisite: MKT 311 or MKT 407 or Eng Mgt 251.

390 Undergraduate Research (IND 0.0-6.0) Designed for the undergraduate student who wishes to engage in research. Not for graduate credit. Not more than six credit hours allowed for graduation credit. Subject and credit to be arranged with the instructor. Prerequisite: Consent of instructor required.

Materials, Science, and Engineering

Materials, Science, and Engineering Courses

301 Special Topics (Variable 0.0-6.0) This course is designed to give the department an opportunity to test a new course. Variable title.

325 Materials Selection in Mechanical Design (LEC 3.0) This course will introduce the basics of materials selection in mechanical design. It will also introduce the benefits of computational materials and process selection. The students will also learn to use a commercially available materials selection software. This course will be offered as Distance Ed. Prerequisite: Met Eng 121.

341 Tissue Engineering I (LEC 3.0) The course will introduce senior undergraduate students to the principles and clinical applications of tissue engineering including the use of biomaterials scaffolds, living cells and signaling factors to develop implantable parts for the restoration, maintenance, or replacement of biological tissues and organs. Prerequisite: Senior standing. (Co-listed with Bio Sci 341)

348 Energy Materials (LEC 3.0) The objectives of the course are to understand how the rational design and improvement of chemical and physical properties of materials can lead to energy alternatives that can compete with existing technologies. Discussions on the present and future energy needs from a view point of multidisciplinary scientific and technological approaches. Prerequisite: Senior standing.

351 Advanced Phase Equilibria (LEC 3.0) Advanced aspects of unary, binary and ternary organic, phase equilibria. Includes practical examples of the applications of phase diagrams to solve engineering problems. Prerequisite: Graduate standing.

Mathematics

Bachelor of Science (Applied Mathematics)

Master of Science (Applied Mathematics)

Master of Science for Teachers (Mathematics)

Doctor of Philosophy (Mathematics)

Emphasis areas at the Bachelor of Science level include actuarial science, algebra/discrete mathematics, applied analysis, computational mathematics, secondary education, and statistics. Emphasis areas at the doctor of philosophy level of mathematics include analysis, differential and functional equations, and statistics.

Mathematics is a universal language. It is one which scientists use to express ideas and relationships concisely. It is a tool, which they use to investigate problems.

As a mathematician, you will set up and analyze models of physical situations in order to deduce new information and to predict results.

Most students pursue their study of mathematics through a differential equations course and then elect courses in specialized areas such as algebra, analysis, geometry, topology, and statistics. Supporting study in technical electives is required from other departments. Such study includes analytical mechanics, communication theory, control theory, and others.

Your classes, for the most part, will be held in the Rolla Building. You will be provided data processing and computational services to solve complex problems through the computer facilities. (See computer science description.)

You will find that mathematics contributes to the growth in knowledge in most areas. Your program at Missouri S&T will emphasize breadth in mathematics and depth in an associated area of application.

Faculty

Professors:
Leon Hall (Department Chair), Ph.D., Missouri-Rolla
Martin Bohner, Ph.D., Ulm
Wlodzimierz Charatonik, Ph.D., Warsaw
Stephen Clark, Ph.D., Tennessee
Roman Dwilewicz, D.Sc., Warsaw
Vy Le, Ph.D., Utah
V. Samaranayake, Ph.D., Kansas State

Associate Professors:
Elvan Akin-Bohner, Ph.D., Nebraska-Lincoln
David Grow, Ph.D., Nebraska-Lincoln
E. Matt Insall, Ph.D., Houston
Ilene Morgan, Ph.D., Penn State
Robert Paige, Ph.D., Colorado State
Robert Roe, Ph.D., Wyoming
Xuerong (Meggie) Wen, Ph.D., Minnesota
Assistant Professors:
Akim Adekpedjou, Ph.D., South Carolina
Xiaoming He, Ph.D., Virginia Tech
Gayla Olbricht, Ph.D., Purdue
John Singler, Ph.D., Virginia Tech
Yanzhi Zhang, Ph.D., National University of Singapore
Associate Teaching Professors:
Stephanie Fitch, M.A., University of Texas at Austin
Dee Leach, M.S., Santa Clara University
Assistant Teaching Professors:
Kimberly Kinder, M.S., Central Missouri State
Paul Runnion, M.S., Missouri S&T
Emeritus Faculty:
Lee Bain, Ph.D., Oklahoma State
August Garver, M.S., Missouri-Rolla
Glen Haddock, Ph.D., Oklahoma State
Roger Hering, Ph.D., Southern Illinois
Troy Hicks, Ph.D., Cincinnati
W. Thomas Ingram, Ph.D., Auburn
James Joiner, Ph.D., George Peabody
Mary Kirgan, M.S.T., Missouri-Rolla
Jagdish Patel, Ph.D., Minnesota
Lyle Pursell, Ph.D., Purdue
Selden Trimble, Ph.D., Kentucky

Bachelor of Science Applied Mathematics

A minimum of 132 credit hours is required for a Bachelor of Science degree in Applied Mathematics. A minimum grade of "C" is required by the department in each course counted toward the Math/Stat requirement for the B.S. in Applied Mathematics. Moreover, the department requires that an average of at least two grade points per credit hour must be obtained for all courses taken within the department. These requirements for the B.S. degree are in addition to credit received for algebra, trigonometry, and basic ROTC.

The Applied Mathematics curriculum requires fifteen semester hours of technical electives in addition to basic courses in chemistry or biology, physics, computer science, and economics. Two semesters of a foreign language, English 60 or English 160, and either History 175, 176, 112, or Pol Sc 90 are also required. Specific requirements for the bachelor's degree are outlined in the sample program below.

FRESHMAN YEAR

First Semester	Credit
Math 1-Intro to Math	1
Math 8-Calculus w/Analytic Geometry I[1]	5
Chem 4-Intro to Lab Safety & Haz Mat	1
English 20-Exposition & Argumentation	3
Campus History Requirement[2]	3
Foreign Language Requirement[3]	4
Basic ROTC (if elected)[4]	0
	17
Second Semester	
Math 21-Calculus w/Analytic Geometry II[1]	5
Science Requirement[5]	5
Cmp Sc 53 or 73 & 77 or Cmp Sc 74 & 78	3
Foreign Language Requirement[3]	4
Basic ROTC (if elected)[4]	0
	17

SOPHOMORE YEAR

First Semester	Credit
Math 22-Calculus w/Analytic Geometry III[1]	4
Math 208-Linear Algebra I[1]	3
Statistics Requirement[6,A,J]	3
Physics 21-General Physics I	4
Physics 22-General Physics Lab	1
English 60-Writing & Research	3
Basic ROTC (if elected)[4]	0
	18
Second Semester	
Math 204-Elementary Differential Equations[1]	3
Math 209-Foundations of Mathematics[1]	3
Econ 121-Microecon or 122-Macroecon	3
Physics 25-General Physics II	4
Physics 26-General Physics Lab	1
Computer Science Requirement[7,A]	3
Basic ROTC (if elected)[4]	0
	17

JUNIOR YEAR

First Semester	Credit
Math 309-Advanced Calculus I[1]	3
Literature	3
Electives-Math or Stat[1,2,3]	3
Electives-Technical[8]	3
Electives	3
	15
Second Semester	
Math 311-Advanced Calculus II[1]	3
Literature	3
Electives-Math or Stat[1,2,3]	3
Electives-Technical[8]	3
Electives	3
	15

SENIOR YEAR

First Semester	Credit
Math 361-Problem Solving Pure Math[1,2]	1
Math 371-Problem Solving Applied Math[2,3]	1
Electives-Math or Stat[1,2,3]	3
Electives-Technical[8]	6
Electives	6
	17
Second Semester	
Math 381-Great Theorems in Math[1,2]	1
Electives-Math or Stat[1,2,3]	3
Electives-Technical[8]	3
Electives	9
	16

[1] A minimum grade of "C" is required by the department in each course counted toward the Math/Stat requirement for the B.S. in Applied

Mathematics. Moreover, the department requires that an average of at least two grade points per credit hour must be obtained for all courses taken within the department.

[11] May be met by History 112, 175, 176, or Pol Sc 90.

[12] A modern language approved by the advisor (six hours credit is acceptable from transfer students.) Requirement may be met by examination or, with approval of the department, by three years of a foreign language in high school.

[13] Basic ROTC may be elected in the freshman and sophomore years, but is not creditable toward a degree. Up to six credit hours of advanced ROTC may be credited as free electives towards a degree.

[11] May be met by Chem 1 and 2 or by Bio Sc 110 and 112.

[11] May be met by Stat 215, 217, or 343.

[3] No course may be used to satisfy more than one degree requirement.

[5] May be met by Cmp Sc 153, 128 or 228.

[9] The student must choose two from the following five groups and then complete six hours in each of the chosen groups (1) Math 305, 306, 307, 308; (2) Math 315, 330, 351, 385; (3) Math 302, 303, 322, 325, 351, 383; (4) Stat 343, 344, 346, 353; (5) Cmp Sc 228, 328, 329, Stat 346, Math 303, Econ 321.

[13] Courses in chemistry, physics, mechanics, geology, computer science, economics or engineering approved by advisor.

[12] The three courses Math 361, 371, and 381, constitute the Capstone experience for mathematics majors.

Math Minor Curriculum

The minor will consist of at least 12 hours of mathematics/statistics courses at the 200* or higher level, 9 hours of which must be completed in residence at Missouri S&T and 3 hours of which must be at the 300 or higher level, and passing all of them with at least a grade of "C". Further, Math 204 and Math 229 cannot both be counted, Math 203 and Math 208 cannot both be counted, and at most one of Stat 211, Stat 213, Stat 215 and Stat 217 may be counted. Finally, the specific choice of courses is subject to the approval of the minor advisor.

*Computer Science 228 (Introduction to Numerical Methods) may be substituted for one of these courses.

Bioinformatics Minor

Students majoring in Mathematics are eligible to pursue a minor in bioinformatics. See the description of the bioinformatics minor.

Emphasis Areas at the Bachelor of Science Level[12]

Actuarial Science Emphasis Area[11]

Required courses:
Stat 343-Probability and Statistics 3
Stat 344-Mathematical Statistics 3
Stat 346-Regression Analysis 3
Stat 353-Statistical Data Analysis 3
Econ 121-Principles of Microeconomics 3
Econ 122-Principles of Macroeconomics 3
Econ 222-Intermediate Macroeconomic Theory 3
Econ 321-Finance 3

In addition, the student must pass the first Actuarial Science Exam.

Algebra/Discrete Mathematics Emphasis Area[12]

Required courses:
Math 305-Modern Algebra I 3
Math 306-Modern Algebra II or Math 405 Finite Flds . 3
Math 307-Combinatorics 3
Math 308-Linear Algebra II 3
Stat 343-Probability & Statistics 3
and three hours from:
Stat 344-Math Statistics 3
Cmp Sc 228-Intro to Numerical Methods 3
Cmp Sc 330-Formal Language & Automata Theory I . 3
Cmp Sc 325-Analysis of Algorithms 3

Computational Mathematics Emphasis Area[12]

Required courses:
Stat 353-Stat Data Analysis 3
Stat 346-Regression Analysis 3
Cmp Sc 228-Intro to Numerical Methods 3
and six hours from:
Math 302-Intermediate Differential Equations 3
Math 303-Mathematical Modeling 3
Math 325-Partial Differential Equations 3
and three hours from:
Cmp Sc 328-Object-Orient Num Mod I 3
Cmp Sc 329-Object-Orient Num Mod II 3
EMech 307-Finite Element Approx 3

Applied Analysis Emphasis Area[12]

Required:
Cmp Sc 228-Intro to Numerical Methods 3

and two of groups 3, 4, and 5 under Mathematics of Statistics electives must be satisfied.

and choose Technical Electives and Free Electives to satisfy one of the following two options:

Engineering Option (A)

Required courses:
Inter Eng 50-Statics 3
Inter Eng 110-Mechanics of Materials 3
And one of the following two courses:
Inter Eng 150-Eng Mech-Dynamics 2
ME 160-Dynamics 3
And nine hours from the following list. Courses, which have any of the listed courses as prerequisites, may also be used to fulfill this requirement. Courses with an asterisk (*) are co-listed in more than one department.
Ae Eng 213-Aerospace Mechanics I 3
Ae Eng 207-Vibrations I* 3

Ae Eng 313-Interm Dyn of Mech & Ae Sys 3
Ae Eng 314-Spaceflight Mech 3
Ch Eng 120-Chem Eng Mat Bal 3
Ch Eng 141-Chem Eng Thermodynamics I 3
Cv Eng 218-Structural Analysis 3
El Eng 281-Elec Cir or El Eng 282-Elec Cir & Mach . . 3
Mc Eng 213-Machine Dynamics 3
Mc Eng 219-Thermo or Mc Eng 227-Thermal Analysis 3
Mc Eng 331-Thermo Fluid Mech III* 3
Nu Eng 203-Interactions of Radiation w/Matter 3
Nu Eng 303-Reactor Physics I 3
Pe Eng 141-Prop of Hydrocarbon Fluids 3
Pe Eng 320-Fund of Petro Reservoir Simulation 3
Cv Eng 230-Elem Fluid Mech or Nu Eng 221-Reactor Fluid Mech or Mc Eng 231-Thermo Mech I 3
Cv Eng 323-Class & Matrix Meth of Struct Analysis . . 3
Cv Eng 333-Intermediate Hydraulic Eng 3
El Eng 368-Intro to Neural Networks & Appl 3
EMech 307-Finite Element Approx I 3
EMech 311-Intro to Continuum Mechanics 3
EMech 334-Stability of Eng Structures* 3
EMech 354-Variational Form of Mech Problems 3
Ge Eng 315-Geometrics 3
Geo 286-Intro to Geop Data Analysis or Geop 286-Intro to Geop Date Analysis 3
Geop 321-Potential Field Theory 3

Physics Option (B)

Required courses:
Physics 207-Modern Physics I 3
Physics 307-Modern Physics II 3

And take at least nine additional hours of physics courses at the 200 level or above. Note that the requirements for a minor in physics will be satisfied with this option.

Secondary Education Emphasis Area

You may earn a B.S. Degree in Applied Mathematics from Missouri S&T and certification to teach at the secondary level in the schools of Missouri with this emphasis area program. This program can be completed in four academic years and student teaching is arranged with public schools within 30 miles of the Missouri S&T Campus.

Students interested in this emphasis area should consult with the advisor for Mathematics Education majors in the Mathematics and Statistics Department.

In order to successfully complete this emphasis area, students must have at least a 22 ACT, maintain a cumulative GPA of at least 2.5, and attain at least a 2.5 GPA in all mathematics courses. Current Missouri S&T or transfer students who wish to pursue this emphasis area must meet both these GPA requirements to be accepted into the program. Students must also meet all requirements listed under the Teacher Education Program in the catalog. Students who do not meet all the teacher certification requirements will not be eligible for the Secondary Education Emphasis Area, even if they have completed all course work.

A degree in this emphasis area requires 132 credit hours. The required courses and a sample four-year program are provided below. (A minimum grade of "C" is required by the department in all mathematics and statistics courses counted toward this degree. No course may be used to satisfy more than one degree requirement.)

FRESHMAN YEAR

First Semester	Credit
Math 1-Intro to Math	1
Math 8-Calculus w/Analytic Geometry I	5
English 20-Exposition & Argumentation	3
History Requirement (History 175 or 176)	3
Cmp Sc 53 or 73 & 77 or Cmp Sc 74 & 78	3
	15
Second Semester	
Math 21-Calculus w/Analytic Geometry II	5
Bio Science 110-General Biology	3
Science Lab Requirement (Bio Sc 112)[3]	2
Psychology 50-General Psychology	3
Education 40-Perspectives in Education	2
	15

SOPHOMORE YEAR

First Semester	Credit
Math 22-Calculus w/Analytic Geometry III	4
Math 208-Linear Algebra I	3
Physics 21-General Physics I	4
Physics 22-General Physics Lab	1
Psychology 208-Psych/Educ of the Adolescent	3
Education 104-Teacher Field Experience	2
	17
Second Semester	
Math 204-Elementary Differential Equations	3
Math 209-Foundations of Mathematics	3
English 60-Writing & Research	3
Physics 25-General Physics II	4
Physics 26-General Physics Lab	1
Speech 85-Principles of Speech	3
	17

JUNIOR YEAR

First Semester	Credit
Math 309-Advanced Calculus I	3
Statistics Requirement (Stat 215, 217, or 343)	3
Education 164-Aiding Secondary Schools	2
Education 174-School Organization and Admin	2
Psychology 155-Educational Psychology	3
Econ 121-Microecon or 122-Macroecon	3
	16
Second Semester	
Math 311-Advanced Calculus II	3
Math 330-Topics in Geometry	3
Psychology 354-Psych of the Exceptional Child	3
Education 280-Teaching Methods	6
Fine Art Elective[2]	3
	18
Summer Semester	
Education 216-Teaching Reading	3

SENIOR YEAR

First Semester	Credit
Math 361-Problem Solving Pure Math[1]	1
Math 371-Problem Solving Applied Math[1]	1
Electives-Math or Stat*	6
Educ 251-Historical Foundation of Amer Educ	3

Pol Science 90-American Government 3
Literature 3
17

Second Semester
Math 381-Great Theorems in Math[2] 1
Educ 298 and 299-Student Teaching 13
14

[1] May be met by Bio Sci 112 or Chem 2, but if Chem 2 is used, one extra hour must be attained in any elective area to fulfill the 132 total hour requirement.
[2] Any three-hour course from the areas of foreign language, music, theater, philosophy or art.
[3] The three courses Math 361, 371, and 381 constitute the Capstone experience for mathematics majors.
[4] Any two three-hour courses from the following list with the approval of the Mathematics Education advisor. Math 302, 303, 305, 306, 307, 308, 315, 322, 325, 330, 351, 383, 385; Stat 343, 344, 346, 353; Cmp Sc 228, 328, 329; Econ 321.

Statistics Emphasis Area

Required courses:
Stat 343-Prob & Stat 3
Stat 344-Math Stat 3
Stat 346-Regression Analysis 3
Stat 353-Stat Data Analysis 3
and complete 6 hours from:
Bio Sc 231-General Genetics 3
Cmp Sc 228-Intro to Numerical Methods 3
Eng Mg 385-Statistical Process Control 3
and complete either A or B:
(A)*Complete the following two courses:*
Math 315-Intro to Real Analysis 3
Math 351-Intro to Complex Variables 3
(B)*Complete 6 hours from:*
Math 303-Math Modeling 3
Math 307-Comb & Graph Theory 3
Math 308-Linear Algebra II 3

Note: It is not required that students complete an emphasis area to obtain the Bachelor of Science degree in Applied Mathematics. The emphasis area requirements often specify most, if not all, of the electives in Mathematics, Statistics and Computer Science as well as many technical or free electives.

Mathematics Courses

1 Introduction To Mathematics (LEC 1.0) Introduction to the department, program of study, methods of study, and an introduction of the various areas of mathematics. Required of fall semester freshman mathematics majors.

2 College Algebra (LEC 5.0) Contains the same topics as covered in Math 4, and preceded by a thorough review of the basic principles of algebra. Prerequisite: By placement examination.

3 Fundamentals Of Algebra (LEC 3.0) Basic principles of algebra including the number line and an introduction to equations and inequalities, polynomials, rational expressions, exponents and radicals, the quadratic formula and functions. Prerequisite: Entrance requirements.

4 College Algebra (LEC 3.0) A study of linear equations, rational functions, radicals, quadratic equations, inequalities, determinants, progressions, theory of equations, permutations, combinations, and the binomial theorem. Prerequisite: By placement examination.

6 Trigonometry (LEC 2.0) A study of the trigonometric functions, radian measure, graphing trigonometric functions, identities, trigonometric equations and inverse trigonometric functions. Solutions of general triangles and trigonometric representation of complex numbers are included. Prerequisite: Math 2 or 4 with a grade of "C" or better; or by placement exam.

8 Calculus With Analytic Geometry I (LEC 5.0) A study of limits, continuity, differentiation and integration of algebraic and trigonometric functions. Applications of these concepts in physical as well as mathematical settings are considered. Credit will only be given for one of Math 8 or Math 14. Prerequisites: Math 6; Math 2 or 4, both with a grade of "C"; or better; or by placement exam.

10 Introduction To Mathematical Ideas (LEC 3.0) A course for non-science majors, including liberal arts and education majors. A study of the nature of mathematics and its relation to western culture, number systems, sets, functions, and selected topics from algebra, computer science and other areas of mathematics. Prerequisite: Two years high school mathematics.

12 Business Calculus (LEC 3.0 and LAB 1.0) Calculus for Bus. & Mgt. Sys, Econ & Finance, or Info. Sci. & Tech; also possibly Bio. Sci, Soc. Sci. or Humanities. Derivatives, optimization, exponential and logarithmic functions, integration, multivariate functions, partial derivatives, Lagrange multipliers, applications. May not be used as a prerequisite for either Math 15 or Math 21. Prerequisite: Math 4 with a grade of "C" or better; or by placement exam.

14 Calculus For Engineers I (LEC 3.0 and LAB 1.0) Introduction to limits, continuity, differentiation and integration of algebraic and elementary transcendental functions. Applications in physical science and engineering. Credit will be given for only one of Math 8 or Math 14. Prerequisites: Math 6; Math 2 or 4, both with a grade of "C"; or better; or by placement exam. Math 14 may be accompanied by Math 6 with advisor's approval.

15 Calculus For Engineers II (LEC 3.0 and LAB 1.0) Continuation of Math 014. Transcendental functions, techniques of integration, sequences, series including power series, polar coordinates, polar and parametric equations. Applications in physical science and engineering. Credit will be given for only one of Math 015 or Math 021.

Prerequisites: Math 6 and either Math 8 or Math 14 both with a grade of "C" or better; or by placement exam.

21 Calculus With Analytic Geometry II (LEC 5.0) A continuation of Math 8; differentiation and integration of elementary transcendental functions, integration techniques, improper integrals, conic sections, polar coordinates, introduction to sequences and series. Credit will only be given for one of Math 21 or Math 15. Prerequisites: Math 6 and either Math 8 or Math 14 both with a grade of "C" or better; or by placement exam.

22 Calculus With Analytic Geometry III (LEC 4.0) An introduction to multivariable calculus. Vector valued functions, curves and surfaces in two and three dimensions, partial differentiation, multiple integration, line and surface integrals, the major theorems of vector calculus, and applications of these ideas are studied. Prerequisite: Math 15 or Math 21 with a grade of "C" or better.

100 Special Problems (IND 0.0-6.0) Problems or readings in specific subjects or projects in the department. Consent of instructor required.

101 Special Topics (Variable 0.0-6.0) This course is designed to give the department an opportunity to test a new course. Variable title.

200 Special Problems (IND 0.0-6.0) Problems or readings in specific subjects or projects in the department. Consent of instructor required.

201 Special Topics (Variable 0.0-6.0) This course is designed to give the department an opportunity to test a new course. Variable title.

202 Cooperative Work Training (IND 0.0-6.0) On-the-job experience gained through cooperative education with industry. Variable credit arranged with the advisor. P/F grading option is required and maximum credit per semester is 3 hrs., maximum for entire program is 6 hrs.

203 Matrix Algebra (LEC 3.0) Matrix algebra is introduced by means of systems of linear algebraic equations. Gaussian elimination, least squares solutions, orthogonalization, determinants, eigenvalues and an introduction to vector spaces are discussed. Credit will not be given for both Math 203 and 208. Prerequisite: Math 22 with a grade of "C" or better.

204 Elementary Differential Equations (LEC 3.0) First order differential equations and linear differential equations of higher order are studied. The Laplace transform and systems of linear equations as well as selected physical applications are covered. Credit will not be given for both Math 229 and Math 204. Prerequisite: Math 22 with a grade of "C" or better.

208 Linear Algebra I (LEC 3.0) Systems of linear equations, matrices, vector spaces, inner products, linear transformations, determinants, and eigenvalues are studied. Prerequisite: Math 15 or 21 or 22 with a grade of "C" or better.

209 Foundations Of Mathematics (LEC 3.0) Introduction to mathematical reasoning through an axiomatic development of mathematical systems. Strong emphasis is placed on learning to understand what constitutes a sound mathematical argument. Communication, both written and spoken, is emphasized. Prerequisite: Math 15 or 21 with a grade of "C" or better.

210 Undergraduate Seminar (SEM 1.0-3.0) Discussion of advanced or current topics. (Course cannot be used for graduate credit).

221 Teaching Math In Elementary And Middle Schools (LEC 3.0) The course presents an overview of how children learn mathematics, various techniques in teaching mathematics, and examples of applying these techniques to specific mathematical concepts (such as geometry, measurement, basic operations, statistics and probability, etc.). Prerequisite: Educ 40 or Math 2 or 4. (Co-listed with Educ 221)

222 Geometric Concepts For Elementary Teachers (LEC 3.0) The course covers methods of teaching the study of points, lines, polygons, similarity, congruence, constructions, and proof in Euclidean Plane Geometry. Transformational geometry and trigonometry are introduced to elementary teachers. Prerequisite: Educ 40 or Math 2 or 4. (Co-listed with Educ 222)

229 Elementary Differential Equations And Matrix Algebra (LEC 3.0) This course is a combination of selected topics from Math 203 and 204. Solutions of linear differential equations and systems of linear algebraic equations are emphasized. Credit will not be given for both 204 and 229. Prerequisite: Math 22 with a grade of "C" or better.

240 Mathematical Software Applications In The Classroom (LEC 3.0) Students will be introduced to a variety of Mathematical Software applications, both PC and calculator based which will aid teachers in presenting concepts and in classroom management. Specific topics covered will be selected based on student interest. Prerequisites: Math 22 and admission to the MST program.

300 Special Problems (IND 0.0-6.0) Problems or readings on specific subjects or projects in the department. Consent of instructor required.

301 Special Topics (Variable 0.0-6.0) This course is designed to give the department an opportunity to test a new course. Variable title.

302 Intermediate Differential Equations (LEC 3.0) Linear differential equations, vector-matrix systems, existence and uniqueness theory, nonlinear systems, phase-plane analysis, introduction to stability theory. Prerequisite: Math 204 or Math 229.

303 Mathematical Modeling (LEC 3.0) Model construction and the modeling process, model fitting, models requiring optimization, empirical model construction, modeling dynamic behavior. Individual and team projects. Prerequisites: Math

204 or 229 with a grade of "C" or better, Programming competency.

305 Modern Algebra I (LEC 3.0) Equivalence relations and functions, basic properties of groups, subgroups, permutations, cosets and Lagrange's Theorem, homomorphisms and isomorphisms, factor groups. Prerequisite: Math 209 or graduate standing; preceded or accompanied by Math 208.

306 Modern Algebra II (LEC 3.0) This course is a continuation of Math 305. Rings and fields are discussed. Euclidean domains, principal ideal domains, unique factorization domains, vector spaces, finite fields and field extensions are studied. Prerequisite: Math 305.

307 Combinatorics And Graph Theory (LEC 3.0) Covers some basics of enumeration and graph theory. Topics are selected from the following: permutations combinations, the inclusion/exclusion principle, generating functions, recurrence relations, trees, networks, graph connectivity and graph coloring. Prerequisite: Cmp Sc 128 or Math 209.

308 Linear Algebra II (LEC 3.0) Eigenvalue problems, Cayley-Hamilton theorem, Jordan normal form, linear functionals, bilinear forms, quadratic forms, orthogonal and unitary transformations, selected applications of linear algebra. Prerequisite: Math 208.

309 Advanced Calculus I (LEC 3.0) Completeness of the set of real numbers, sequences and series of real numbers, limits, continuity and differentiability, uniform convergence, Taylor series, Heine-Borel theorem, Riemann integral, fundamental theorem of calculus, Cauchy-Riemann integral. Prerequisite: Math 22 and Math 209, or a 300-level mathematics course, or graduate standing.

310 Undergraduate Seminar (SEM 1.0-3.0) Discussion of advanced or current topics. (Course cannot be used for graduate credit).

311 Advanced Calculus II (LEC 3.0) Euclidean n-space, differentiation and integration of scalar functions of several variables, maxima and minima theory, change of variables, differentiation and integration of vector functions of several variables, Divergence theorem, Stokes' theorem. Prerequisite: Math 309.

315 Introduction To Real Analysis (LEC 3.0) Riemann-Stieltjes integration, sequences and series of functions, uniform approximation, the Banach Space C(a,b), Lebesgue measure and integration, the space LP(a,b), Fourier series. Prerequisite: Math 309.

322 Vector And Tensor Analysis (LEC 3.0) Vector algebra, vector differential and integral calculus, line and surface integrals, theorems of Stokes and Gauss, tensor algebra and tensor analysis, applications to problems in kinematics, elasticity theory, fluid mechanics, electromagnetic theory, relativity theory. Prerequisite: Math 22; Math 203 or Math 208.

325 Partial Differential Equations (LEC 3.0) Linear equations, heat equation, eigenfunction expansions, Green's formula, inhomogeneous problems, Fourier series, wave equation. Prerequisite: Math 204 with a grade of "C" or better.

330 Topics In Geometry (LEC 3.0) A survey of non-Euclidean geometries, finite geometries, affine and projective planes, metric postulates for the Euclidean plane, and selected topics. Prerequisite: Math 208.

337 Financial Mathematics (LEC 3.0) The course objective is to provide an understanding of the fundamental concepts of financial mathematics. Topics include pricing, assets-liability management, capital budgeting, valuing cash flow, bonds, futures, swaps, options. Preparation for the financial mathematics actuarial exam will be provided. Prerequisites: Math 15 or Math 21, Econ 221 or Econ 222 or Econ 250 or Econ 321, Stat 211 or Stat 213 or Stat 215 or Stat 217 or Stat 343. (Co-listed with Econ 337)

340 Mathematical Analysis For Secondary Teachers (LEC 3.0) Designed to help teachers gain a deeper understanding of the fundamental idea in analysis, that of a limit. A discovery method is used which includes both individual and group work. Students will present their results in written and oral format. Prerequisite: Math 22 or equivalent.

341 Mathematical Analysis For Secondary Teachers Practicum (LEC 1.0) An instructional unit based on the discovery method used in Math 340 will be designed by each student. These units will be class tested. The unit and results of class testing will be presented both in written and oral format. Prerequisite: Math 340.

351 Introduction To Complex Variables (LEC 3.0) The basic tools of complex variables are studied. These include the Cauchy-Riemann equations, complex contour integration, the Cauchy-Goursat theorem, conformal mappings, the calculus of residues and applications to boundary value problems. Prerequisite: Math 204.

354 Mathematical Logic I (LEC 3.0) A mathematical introduction to logic with some applications. Functional and relational languages, satisfaction, soundness and completeness theorems, compactness theorems. Examples from Mathematics, Philosophy, Computer Science, and/or Computer Engineering. Prerequisite: Philos 15 with junior standing or Math 305 or Comp Sci 253 or Comp Eng 111. (Co-listed with Comp Eng 354, Comp Sci 354 and Philos 354)

361 Problem Solving In Pure Mathematics (LEC 1.0) Problems from pure mathematics, including analysis, algebra, number theory, set theory, finite mathematics, probability and statistics. Emphasis on identifying or inventing ways to solve problems based on the student's entire mathematics background. Prerequisites: Corequisite Math 309 and Senior standing.

371 Problem Solving In Applied Mathematics (LEC 1.0) Problems from applied mathematics which are open-ended, and do not always have a unique correct solution. Emphasis on developing mathematical models and writing solution narratives, including clarity, analysis, and design. Prerequisites: Math 209 and Senior standing.

381 Great Theorems In Mathematics (LEC 1.0) A study of some of the great theorems which have shaped the development of mathematics and human civilization. History, the changing nature of mathematics, and the mathematical content of the theorems themselves, will all be addressed. Sources as close to the originals as possible will be used. Prerequisites: Math 209 and Senior standing.

383 Operational Calculus (LEC 3.0) The Laplace transformation, properties of the transformation, various applications to ordinary and partial differential equations, systems with step and Dirac functions as driving forces, various non-elementary functions and their transforms, problems in heat conduction and wave motion, Fourier transforms and their operational properties. Prerequisite: Math 204.

385 Introduction To Topology (LEC 3.0) Metric spaces; general topological spaces; connectedness, compactness, separation properties, functions and continuity. Prerequisite: Math 309.

390 Undergraduate Research (IND 0.0-6.0) This course is designed for the undergraduate student who wishes to engage in research. It is not to be used for graduate credit nor for more than six credit hours of undergraduate credit. The subject and credit are to be arranged with the instructor. Prerequisite: Consent of Instructor.

Mechanical Engineering

Bachelor of Science
Master of Science
Doctor of Philosophy
Doctor of Engineering

Emphasis areas at all levels in control systems, energy conversion, environmental systems, instrumentation, manufacturing processes, materials science, mechanical design and analysis, and thermal science.

The Mechanical Engineering Program is offered in the Department of Mechanical and Aerospace Engineering.

Mechanical Engineering has broad applications and is one of the most basic of all branches of engineering.

As a mechanical engineer you will be concerned with the conversion and transfer of energy from one form to another; with the design, construction, and operation of all types of machines; and with the selection and design of instrumentation and systems for the control of all types of physical and environmental systems.

You may design products and manufacturing processes, supervise production methods and operations, design and supervise fabrication and testing of individual machines and complete plants, or be involved in applied or basic research.

In your first few semesters as a mechanical engineering student, you will develop a sound background in the fundamental sciences of mathematics, physics, and chemistry, and you will take a broad selection of liberal arts courses. You will also learn to work with computers. Onto this foundation you will add the basic required courses of engineering sciences and technology including stress analysis, machine design, machine dynamics, electricity, electronics, control theory, thermodynamics, heat transfer, energy conversion, fluid mechanics, computer-aided engineering (CAE), and computer-aided design (CAD).

To provide some degree of specialization for those students who are interested in a particular area of mechanical engineering, there are six hours of technical electives that you can select to concentrate in an emphasis area (such as robotics, manufacturing automation, fluid mechanics, heat transfer, dynamics and controls, solid mechanics, vibrations, and design). If you are interested in getting some background in a closely allied field such as aerospace, petroleum, or nuclear engineering, you can, with the aid of your advisor, select some of your desired technical electives in those fields.

The Mechanical and Aerospace Engineering department also has a departmental honors program. This program provides extra educational opportunities for you if you qualify. Upon satisfactory completion of the program the designation of "Honors Scholar in Engineering" will appear on your diploma and transcript.

Mission Statement

To build and enhance the excellent public program that the Department of Mechanical and Aerospace Engineering currently is, and to be recognized as such; to provide our students with experiences in solving open-ended problems of industrial and societal need through learned skills in integrating engineering sciences, and synthesizing and developing useful products and processes; to provide experiences in leadership, teamwork, communications-oral, written and graphic, and hands-on activities, with the help of structured and unstructured real-life projects.

Program Educational Objectives

The Mechanical Engineering program seeks to prepare its graduates for the following early career and professional accomplishments in their employment by industry, government agencies, academia, or private practice:

- Demonstrated engineering competence, successfully contributing within their career fields with increasing levels of responsibility and influence

DC #0425-2012-Math-000-a

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

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:
B.S. in Applied Mathematics, Actuarial Science emphasis

Department: Mathematics and Statistics

Briefly describe action requested (Attach documentation as appropriate):

Current: Stat 343, Stat 344, Stat 346, Stat 353, Econ 121, Econ 122, Econ 222, Econ 321, pass the first Actuarial Science Exam.

Proposed:
Stat 343-Probability and Statistics.....3
Stat 344-Mathematical Statistics.....3
Econ 121-Principles of Microeconomics.....3
Econ 122-Principles of Macroeconomics.....3
Econ 222-Intermediate Macroeconomic Theory.....3
Math 337-Financial Mathematics..... 3
and six hours from:
Stat 314-Applied Time Series Analysis.....3
Stat 346-Regression Analysis.....3
Stat 353-Statistical Data Analysis.....3
Stat 355-Statistical Models in Actuarial Science.....3
Stat 356-Statistical Models for Life Contingencies.....3

In addition, the student must pass the first Actuarial Science Exam.

Recommended by Department: Leon Jr Hall (Chair signature) Date: 4/30/2012

Recommended by: Discipline Specific Curricula Committee Daniel Teuite (Chair signature) Date: 9/7/2012

Approved by Curricula Committee: Daniel Teuite (Chair signature) Date: 10/5/2012

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

April 26, 2012

Justification for Changes to Applied Mathematics Curriculum, Actuarial Science emphasis

The Actuarial Science emphasis area is one of the most popular choices for our undergraduate majors who do not plan on graduate study. As of the 2009-2011 Undergraduate Catalog, we have two new course offerings specifically for Actuarial Science students; we have been permitting students to use these courses to substitute for other requirements, but we would now like to make formal changes to the degree to reflect the new courses.

Our rationale for the specific nature of the changes is as follows:

Math 337 is a logical replacement for Econ 321/Finance 350 because it prepares students for the second Actuarial Science exam. Stat 355 and 356 are new courses which we think are appropriate for Actuarial Science students but do not want to require because they are not offered every year (they will likely be offered every two to two and one half years).

We want to include both Stat 314 and Stat 346 in the course choices because those two courses together satisfy one of the Validation by Educational Experience requirements of the Society of Actuaries.

Department of Mathematics and Statistics • 202 Rolla Building • 400 W. 12th St. • Rolla, MO 65409-0020
Phone: 573-341-4541 • Fax: 573-341-4741 • Email: mathstat@mst.edu • Web: math.mst.edu

Effective Year: FS2013 DC #0426-2012-EE-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:
Electrical Engineering B.S. Program with Power ~~and Energy~~ and Energy Emphasis

Department: Electrical & Computer Engineering

Briefly describe action requested (Attach documentation as appropriate):

Add EE 353 Power Electronics as an additional approved elective for EE Elective D or Elective E in the EE B.S. with Power ~~and Energy~~ and Energy Emphasis.

The emphasis area change will be added to students' CAPS/Audit report.

The catalog description for emphasis areas will be changed accordingly. The old ~~descrition~~ description for the power and energy course list is "Power and Energy: El Eng 205 or 207, and 30X (Excluding El Eng 200, 201, 202, 300, and 301 Course)" The new descrition for the power and energy course list will be "Power and Energy: El Eng 205 or 207, 353, and 30X (Excluding El Eng 200, 201, 202, 300, and 301 Course)"

Recommended by Department: Kelly Erwin (Chair signature) Date: 13 Aug 2012

Recommended by Discipline Specific Curricula Committee: Stephen Roper (Chair signature) Date: 8/26/12

Approved by Curricula Committee: Daniel Pack (Chair signature) Date: 10/5/2012

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

Effective Year: FS2013
Effective Term: Summer ☐ **Fall** ☒ **Spring** ☐
(Creating or modifying a degree program must be effective for a Fall term)

DC #0427-2012-EE-000-00

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:
Electrical Engineering B.S. Program (General & all 7 Emphasis Areas)

Department: Electrical & Computer Engineering

Briefly describe action requested (Attach documentation as appropriate):
The El Eng 391 requirement is changed to El Eng 391 with a "C" or better for graduation with an El Eng (general and all 7 emphasis areas) undergraduate degree. Footnote 3 is applied to El Eng 391 and "391," is added to the wording such that it reads "A minimum grade of "C" must be attained in ... , 391, and Cp Eng 111 and 112. Also, ...". Approved at the April 16, 2012 ECE Faculty Meeting

Recommended by Department: Kelly Emelko (Chair signature) Date: 13 Aug 2012

Recommended by: Stephen Rapp (Chair signature) Date: 8-26-12
Discipline Specific Curricula Committee

Approved by Curricula Committee: David Sailor (Chair signature) Date: 10/5/2012

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

08/13/12

(Revised 1/31/2008)

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

DC #0428-2012-EE-000-00

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:
Minor in Electrical Engineering

Department: Electrical & Computer Engineering

Briefly describe action requested (Attach documentation as appropriate):
Create a Minor in Electrical Engineering with the requirements noted below.
The El Eng Minor will be noted on the student's transcript.
The catalog description for the minor will be added as follows.

Electrical Engineering Minor Curriculum
A minor in Electrical Engineering will require the following:
Pass the El Eng Advancement Exam I (El Eng 151 Final) with a C or better*
Pass El Eng 153 and El Eng Advancment Exam II with a C or better
Pass 12 additional hours of El Eng coursework excluding El Eng 28X, 38X, and 39X. At least 3 lecture hours at the 3XX level are required. A C or better is required for all 12 hours. No transfer courses and no more than 3 hours of El Eng 200 or El Eng 300 may be used to meet the requirements. The course choice for the 12 additional hours are subject to the approval of the minor advisor.
*One opportunity will be given to pass the El Eng Advancement Exam I if a student has prior circuits coursework or experience. Otherwise, the student must pass El Eng 151.

Minor approved per ECE Faculty 4/16/2012.

Recommended by Department: Kelly Erwin (Chair signature) Date: 13 Aug 2012

Recommended by Discipline Specific Curricula Committee: Hughes Roper (Chair signature) Date: 8-26-12

Approved by Curricula Committee: Daniel Fourtz (Chair signature) Date: 10/5/2012

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

Effective Year: ~~2012~~ 2013
Term: Summer ☐ ~~Fall ☒~~ Spring ☒

CC File # 8232-2012-TCom-311.

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:** English and Tech Com — Tch Com
2. **Discipline and Course Number:** **Present:** **Proposed:** 311
3. **Course Title:** **Present:**
   Proposed: International Dimensions of Technical Communication
   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: ~~TCH COM 311~~ Examines complexity of communication of technical information worldwide. Includes topics such as graphics, icons, symbols; user interface design; intercultural communication. ~~Prerequisite: TCH COM 65 or ENGL 65, or equivalent~~ Students may not earn credit for both TCH COM 311 and TCH COM 411.
5. **If course requires field trip check box:** ☐
6. **Credit Hours:** **Present:** **Lecture:** **Lab:** **Total:**

   Proposed: **Lecture: 3** **Lab:** **Total:**
7. **Prerequisites:**
   Present:

   Proposed: Tch Com 65 or Engl 65, or equivalent.
8. **Required for Majors:** ☐ **Elective for Majors:** ☐
9. **Justification:** International Technical Communication is currently being taught as TCH COM 411. TCH COM 311 would be taught concurrently, but would accommodate undergraduate enrollment, especially BS Tech Com majors. Graduate students in 411 would do additional work and be held to higher standards for assessment. See CC 7701 2009 for an example of this type of concurrent offering. ✓
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) ~~TCH COM 411~~ ✓ 2) 3)

4) 5) 6)

Recommended by Department: _____ (Chair signature) Date: 2/14/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 2/16/12

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: ~~2012~~ 2013
Term: Summer ☐ ~~Fall ☒~~ Spring ☒

CC File # 8245-2012-Emgt-147-32

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: EMSE Engmgt

2. Discipline and Course Number: **Present :** 147 **Proposed:**

3. Course Title: **Present:** Engineering Accounting and Finance
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:** **Lab:** **Total:**
Proposed: **Lecture:** **Lab:** **Total:**

7. Prerequisites:
Present: Engmgt 137

Proposed: Emgt 137, or understanding of engineering economic principles.

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

9. Justification: EM~~S~~E ET 147 will replace EM~~S~~E ET 352 as a component of the Minor in Engineering Management. Course content in EM~~S~~E ET 147 is nearly the same as EM~~S~~E ET 352. In addition, ~~EMSE~~ 352 will no longer be offered by the department.
Emgt

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: 2/27/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 8/26/12

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: 2013
Term: Summer ☐ Fall ☒ Spring ☐

CC File # 8246-2012-Emgt-213-10

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:** EMSE ENGMGT
2. **Discipline and Course Number:** **Present:** **Proposed:** 213
3. **Course Title:** **Present:**
   Proposed: Introduction to Complex System Management
   Abbreviated Course Title: ComplexSysMgt
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present:

   Proposed: Provide an understanding of complex systems and tools to manage ~~this~~ complexity in system design, construction, and operation. Topics include systems thinking, modeling and simulation of systems, uncertainty in engineering, risk, and decision making in certain and uncertain environments.
5. **If course requires field trip check box:** ☐
6. **Credit Hours:** **Present:** **Lecture:** **Lab:** **Total:**
   Proposed: **Lecture: 3** **Lab:** **Total: 3**
7. **Prerequisites:**
   Present:
   Proposed: ~~none~~ ~~A grade of C or better~~ Math 8 or Math 14.
8. **Required for Majors:** ☒ **Elective for Majors:** ☐
9. **Justification:** This course will be a required core course for Engineering Management undergraduates. ABET assessment and continuous improvement activities indicate this course will provide students essential knowledge and help to develop their abilities to engage in open ended and ambiguous problem solving and critical thinking efforts.
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: 8/27/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 8/26/12

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

[redacted]

EngMgt 213 – Introduction to Complex System Management
Tuesdays, Thursday 12:30 – 1:45 PM
Fall 2013

Instructor: Dr. Steven Corns
cornss@mst.edu

Office: 213 Engineering Management Building
573-341-6367

Office hours: 10AM Mondays and Wednesdays and by appointment, although I will be in my office as much as possible from 8AM to 4:00PM (open door policy.)

Required Text – *Decision Making In Systems Engineering and Management* by Parnell, Driscoll, and Henderson.

Expected Learning Outcomes –

Provide an understanding of complex systems and tools to manage this complexity in system design, construction, and operation. Topics include systems thinking, modeling and simulation of systems, uncertainty in engineering, risk, and decision making in certain and uncertain environments.

Homework –

Homework is required for this class in lieu of exams. Six homework sets will be assigned during the course. Keep in mind that these problems are a minimum level of knowledge for this class. If you have any difficulty with the assignments, ASK! Come to office hours, email, call, or ask in class.

Grading –

The majority of grade for this class involves the development of a system proposal/design for the final project. There will also be six homework assignments, all of which will be assigned two weeks before they are due.

Overall class grades will be assigned on a percentage scale:

90-100% -- A
80-89% -- B
70-79% -- C
60-69% -- D

The point breakdown is as follows:

- Homework (5% each) 30%

[redacted]

- Mid-term exam 30%
- Final Exam 30%
- Participation/Teamwork* 10%

Late work will not be accepted unless arrangements have been made prior to the due date. Exceptions will be made only for emergencies. *Note that a significant portion of the overall grade is determined by your participation, teamwork, and professionalism.

Academic Dishonesty –

Page 30 of the MST 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. It is available on-line at http://registrar.mst.edu/academicregs/index.html and http://ugs.mst.edu/.

Special Needs –

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 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. Disability Support Services is located in 203 Norwood Hall. Their phone number is 341-6655 and their email is dss@mst.edu.

Academic Alert –

All faculty members are encouraged to utilize the online Academic Alert System. The purpose of the Academic Alert System is to improve the overall academic success of students by improving communication among students, instructors and advisors; reducing the time required for students to be informed of their academic status; and informing students of actions necessary by them in order to meet the academic requirements in their courses.

Effective Year: ~~2012~~ 2013
Term: Summer ☐ ~~Fall ☒~~ Spring ☒

CC File #8247-2012-Emgt-253-32

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:** EMSE
2. **Discipline and Course Number:** **Present :** 253 Eng Mgt **Proposed:**
3. **Course Title:** **Present:** Operations and Production Management
   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:** **Lab:** **Total:**
   Proposed: **Lecture:** **Lab:** **Total:**
7. **Prerequisites:**
   Present: Eng Mgt 134 and 147; Stat 211, 213, or 215. A grade of "C" or better is required in this course to meet degree requirements.
   Proposed: Eng Mgt 134 and 147; Stat 215, (or) Stat 217, ~~or consent of instructor. A grade of "C" or better is required in this course to meet degree requirements.~~
8. **Required for Majors:** ☒ **Elective for Majors:** ☐
9. **Justification:** To be consistent with the current catalog which requires either Stat 215, or 217.

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: 2/27/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 8/22/12

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: ~~2012~~ 2013
Term: Summer ☐ ~~Fall~~ ☒ Spring ☒

CC File # 8248-2012-Emgt-266-32

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:** EMSE Engmgt
2. **Discipline and Course Number:** **Present :** 266 **Proposed:**
3. **Course Title:** **Present: Quality Philosophes and Methods**
   Proposed: Quality
   Abbreviated Course Title: ~~Qty~~ Quality
   (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:** **Lab:** **Total:**
   Proposed: **Lecture:** **Lab:** **Total:**
7. **Prerequisites:**
   Present: Stat 211, 213, or 215.
   Proposed: Stat 215 or 217. Stat
8. **Required for Majors:** ☒ **Elective for Majors:** ☐
9. **Justification:** To be consistent with the current catalog which requires either Stat 215, or 217.

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: 4/2/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 8/26/12

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: ~~2012~~ 2013
Term: Summer ☐ ~~**Fall** ☒~~ **Spring** ☒

CC File # 8249-2012-Emgt-309-32

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: EMSE ENG MGT

2. Discipline and Course Number: **Present :** 309 **Proposed:**

3. Course Title: **Present:** Six Sigma

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:** **Lab:** **Total:**
Proposed: **Lecture:** **Lab:** **Total:**

7. Prerequisites:

Present: Stat 213, 215, or graduate standing.

Proposed: ~~Stat 215, 217, or~~ G graduate standing.

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

9. Justification: ~~To be consistent with the current catalog which requires either Stat 215, or 217.~~

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: 9/27/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 8/26/12

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: ~~2012~~ 2013
Term: Summer ☐ ~~Fall ☒~~ Spring ☒

CC File # 8250-2012-Engt-356-32

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:** EMSE
2. **Discipline and Course Number:** **Present:** ENG Mgt 356 **Proposed:**
3. **Course Title:** **Present:** Industrial System Simulation
   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:** **Lab:** **Total:**
   Proposed: **Lecture:** **Lab:** **Total:**
7. **Prerequisites:**
   Present: Stat 213 or 215.
   Proposed: Stat 215 or ~~217~~ Stat.
8. **Required for Majors:** ☒ **Elective for Majors:** ☒
9. **Justification:** To be consistent with the current catalog which requires either Stat 215, or 217. Required for Industrial Engineering Emphasis, ~~but not~~ and MOT ~~or~~ but not General Engineering Emphasis areas.
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: 2/27/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 8/26/12

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: ~~2012~~ 2013
Term: Summer ☐ ~~Fall ☒~~ Spring ☒

CC File # 8251-2012-Engt-366-32

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:** EMSE
2. **Discipline and Course Number:** **Present :** 366 ENGMGT **Proposed:**
3. **Course Title:** **Present: Business Logistics Systems Analysis**
   Proposed: Supply Chain Management Systems
   Abbreviated Course Title: Supply Chain ~~Mngt~~ MGT Systems
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present: An analysis of logistics function as a total system including inventory, transportation, order processing, warehousing, material handling, location of facilities, customer service, and packaging with trade-off and interaction.

   Proposed: This course focuses on the development of logistics management skills related to global supply chains. Particular attention will be given to supply chain systems management as part of the firm's strategic positioning, cultural interactions and transportation sourcing decisions.
5. **If course requires field trip check box:** ☐
6. **Credit Hours:**

Present:	**Lecture:**	**Lab:**	**Total:**
Proposed:	**Lecture:**	**Lab:**	**Total:**

7. **Prerequisites:**
   Present: Stat 213, or 215.
   Proposed: Stat 215 or 217. Stat
8. **Required for Majors:** ☒ **Elective for Majors:** ☒
9. **Justification:** To be consistent with the current catalog which requires either Stat 215, or 217 and to more accurately describe course title and content. Required for MOT emphasis area students, but not Industrial Engineering or General Engineering Emphasis areas.
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 Dan Enke (Chair signature) Date: 2/27/12

Recommended by Discipline Specific Curricula Committee [signature] (Chair signature) Date: 8/26/12

Approved by Curricula Committee: Daniel Smith (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: ~~2012~~ 2013
Term: Summer ☐ ~~Fall~~ ☒ Spring ☐

CC File # 8252-2012-Emgt-372-32

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:** EMSE
2. **Discipline and Course Number:** **Present :** 372 **Proposed:** Eng Mgt
3. **Course Title:** **Present:** Production Planning and Scheduling
   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:** **Lab:** **Total:**
   Proposed: **Lecture:** **Lab:** **Total:**
7. **Prerequisites:**
   Present: Eng Mgt 282.

   Proposed: Eng Mgt 253.

8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** Eng Mgt 282 was renumbered to Eng Mgt 253.

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 Dan Enke (Chair signature) Date: 8/20/12

Recommended by Discipline Specific Curricula Committee [signature] (Chair signature) Date: 8/26/12

Approved by Curricula Committee: David Faulk (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: ~~2012~~ 2013
Term: Summer ☐ ~~Fall ☒~~ Spring ☑

CC File # 8253-2012-Engt-381-32

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:** EMSE ENGMGT
2. **Discipline and Course Number:** **Present :** 381 **Proposed:**
3. **Course Title:** **Present:** Management and Methods in Reliability
   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:** **Lab:** **Total:**
   Proposed: **Lecture:** **Lab:** **Total:**
7. **Prerequisites:**
   Present: Stat 213 or 215, or 343.

   Proposed: Stat 215, 217, or 343.

8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** To be consistent with the current catalog which requires either Stat 215, or 217.

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 Dan Enke (Chair signature) Date: 8/27/12

Recommended by Discipline Specific Curricula Committee [signature] (Chair signature) Date: 8/26/12

Approved by Curricula Committee: David Jacobs (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: ~~2012~~ 2013
Term: Summer ☐ Fall ☒ Spring ☒

CC File # 8254-2012-Engt-385-32

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:** EMSE Eng Mgt
2. **Discipline and Course Number:** **Present:** 385 **Proposed:**
3. **Course Title:** **Present:** Statistical Process Control
   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:** **Lab:** **Total:**
   Proposed: **Lecture:** **Lab:** **Total:**
7. **Prerequisites:**
   Present: Stat 213, 215.
   Proposed: Stat 215, 217, ~~or consent of instructor~~. ~~and~~ or Stat
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** To be consistent with the current catalog which requires either Stat 215, or 217.

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 Dan Enke (Chair signature) Date: 2/27/12

Recommended by Discipline Specific Curricula Committee [signature] (Chair signature) Date: 8/24/12

Approved by Curricula Committee: Daniel Smith (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: 201X
Term: Summer ☐ Fall ☐ Spring ☒

CC File # 8255-2012-Geop-389-32

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 & Eng
2. **Discipline and Course Number:** **Present :** Geop 389 **Proposed:**
3. **Course Title:** **Present:** **Seismic Data Processing**
   Proposed:
   Abbreviated Course Title: Seis. Data Proc.
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present: Introduction to seismic data processing. Topics to be covered include statics corrections, filtering, velocity analysis, deconvolution, stacking and migration.
   Proposed:
5. **If course requires field trip check box:** ☐
6. **Credit Hours:** **Present:** **Lecture:** 2 **Lab:** 1 **Total:** 3
   Proposed: **Lecture:** 2 **Lab:** 1 **Total:** 3
7. **Prerequisites:**
   Present: Math 22, and Geop 285 or Geop 385
   Proposed: Geop 270 or Geop 385
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** Geop 270, which has been added to the catalog recently, covers the necessary knowledge needed for the 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 Ralph Stone (Chair signature) Date: 4-3-12

Recommended by Discipline Specific Curricula Committee Daniel Smith (Chair signature) Date: 9/7/2012

Approved by Curricula Committee: Daniel Smith (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: 201X
Term: Summer ☐ Fall ☒ Spring ☐

CC File # 8256-2012-Geop-488-31

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 & Eng
2. **Discipline and Course Number:** **Present :** Geop 488 **Proposed:**
3. **Course Title:** **Present:** **Advanced Seismic Interpretation**
   Proposed:
   Abbreviated Course Title: Adv. Seis. Interp.
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present: The integration of geologic information, well log data and seismic information for interpreting the earth's subsurface. The role of data acquisition and processing is emphasized. Laboratory exercises provide experience with both real and modeled data.
   Proposed: The integration of geologic information, well log data and seismic information for interpreting the earth's subsurface using advanced 3-D seismic interpretation software packages. Reservoir identification and evaluation as well as horizon and formation attributes are included.
5. **If course requires field trip check box:** ☐
6. **Credit Hours:**

Present:	**Lecture: 1**	**Lab: 2**	**Total: 3**
Proposed:	**Lecture: 3**	**Lab: 0**	**Total: 3**

7. **Prerequisites:**
   Present: Geop 380, Geop 385
   Proposed: Geop 270 or Geop 385
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** More hours are needed for lecture. The practical skills can be achieved as part of the course assignments.
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 Ralph Flowers (Chair signature) Date: 4-3-12

Recommended by Discipline Specific Curricula Committee Daniel Smith (Chair signature) Date: 9/7/2012

Approved by Curricula Committee: Daniel Smith (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: 2013 **CC File #** 8257-2012-Geop-377-31
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:** Geological Sciences & Eng
2. **Discipline and Course Number:** **Present :** Geop 377 **Proposed:**
3. **Course Title:** **Present:** **Seismic Interpretation**
   Proposed:
   Abbreviated Course Title: Seis. Interp.
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present: An introduction to 2-D/3-D seismic structural interpretation, stratigraphic interpretation, reservoir identification and evaluation, and horizon and formation attributes. The students are expected to master interactive 2-D/3-D seismic interpretation software packages that are routinely used in ....
   Proposed:
5. **If course requires field trip check box:** ☐
6. **Credit Hours:** **Present:** **Lecture:** 1 **Lab:** 2 **Total:** 3
   Proposed: **Lecture:** 2 **Lab:** 1 **Total:** 3
7. **Prerequisites:**
   Present: Geop 270
   Proposed:
8. **Required for Majors:** ☒ **Elective for Majors:** ☐
9. **Justification:** More hours are needed for lecture. Some of the practical skills can be achieved as part of the course assignments.
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 Ralph Flow (Chair signature) Date: 4-3-12

Recommended by Discipline Specific Curricula Committee Daniel Fink (Chair signature) Date: 9/9/2012

Approved by Curricula Committee: Daniel Fink (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

From: 573 341 4362 Page: 8/13 Date: 8/17/2012 9:58:45 AM

Effective Year: 2013
Term: **Summer** ☐ **Fall** ☐ **Spring** ☒

CC File # 8260-2012-BioSci-271-10

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:** Biological Sciences
2. **Discipline and Course Number:** **Present:** ~~201~~ **Proposed:** BioSci 271
3. **Course Title:** **Present:** **Issues in Public Health**
   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: Due to globalization, diseases such as West Nile Disease, Ebola Hemorrhagic Fever, and SARS are able to overcome geographic barriers and become widespread. We will discuss the nature of these diseases and their impact on public health, national security, and the ~~economy of~~ global ~~society~~ economy.
5. **If course requires field trip check box:** ☐
6. **Credit Hours:**
   Present: **Lecture:** 2 **Lab:** 0 **Total:** 2
   Proposed: **Lecture:** 2 **Lab:** 0 **Total:** 2
7. **Prerequisites:**
   Present: BioSci 110 or BioSci 111

   Proposed:
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** Course has been taught twice as experimental course (201) and is now being given a regular number.
10. **Semesters previously offered as an experimental course (101, 201, 301, 401):** SP2011, SP2012
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: 9/6/12

Recommended by Discipline Specific Curricula Committee Daniel Faith (Chair signature) Date: 9/9/2012

Approved by Curricula Committee: Daniel Faith (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

CC File #8261-2012-BioSci-461-33

Effective Year: 2013
Term: Summer ☐ Fall ☐ Spring ☒

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

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

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

1. **Department:** Biological Sciences BioSci
2. **Discipline and Course Number:** **Present :** 461 **Proposed:**
3. **Course Title:** **Present:** **Advanced Cell Biology**
   Proposed: **Molecular Cell Biology**
   Abbreviated Course Title: ~~Mol Cell Bio~~ Molecular Cell Biology
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present: Advanced study of the biology of eukaryotic cells, including biomembranes and membrane transport, subcellular organelles, cellular energetics, protein sorting, cytoskeletal elements, cell to cell signalling, regulation of the cell cycle, and tissue organization.

   Proposed: (no change)

5. **If course requires field trip check box:** ☐
6. **Credit Hours:** **Present:** **Lecture:** 3 **Lab:** 0 **Total:** 3
   Proposed: **Lecture:** 3 **Lab:** 0 **Total:** 3
7. **Prerequisites:**
   Present: BioSci 211 or equivalent

   Proposed: BioSci 211 or equivalent
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** The proposed new name better fits the course desciption

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: 4/6/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 9/17/2012

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: 2013
Term: **Summer** ☐ **Fall** ☐ **Spring** ☒

CC File # 8266-2012-EE-~~454~~ 454-10

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 401~~ **Proposed:** EE 454
3. **Course Title:** **Present:** **Power Converter Modeling and Design**
   Proposed: Same
   Abbreviated Course Title: Pwr Conv Model & Design
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present: Students will learn electrical, magnetic, and thermal modeling techniques for switching power converters that are applicable to both simulation and analysis. Students will then learn a generic framework to design optimal converters using these models.

   Proposed: Students will integrate electrical, magnetic, and thermal modeling techniques into a design process for switching power converters. A variety of applications will be considered, including dc-dc, ac-dc, and dc-ac converters over a wide power range.
5. **If course requires field trip check box:** ☐
6. **Credit Hours:**

Present:	**Lecture:** 3	**Lab:** 0	**Total:** 3
Proposed:	**Lecture: 3**	**Lab: 0**	**Total: 3**

7. **Prerequisites:**
   Present: EE 353 or equivalent

   Proposed: EE 353
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** This new course expands our offerings at the graduate level in the growing power electronics field. Previous offerings as EE 401 attracted 11 (2009) & 22 (2011) graduate students. EE 353 has had a typical enrollment of 40+over the past 3 years.
10. **Semesters previously offered as an experimental course (101, 201, 301, 401):** SP 2009 & SP 2011
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 Kelly Erickson (Chair signature) Date: 30 Apr 12

Recommended by Discipline Specific Curricula Committee Angela Rasmussen (Chair signature) Date: 8-26-12

Approved by Curricula Committee: Daniel Faits (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: 2013
Term: Summer ☐ **Fall** ☐ **Spring** ☒

CC File # 8267-2012-CpE-404-32

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: Electrical and Computer Engineering

2. Discipline and Course Number: **Present :** CpE 404 **Proposed:**

3. Course Title: **Present: Data Mining & Knowledge Discovery**
Proposed: Advanced Topics in Data Mining

Abbreviated Course Title: Adv. Data Mining Topics
(24 Spaces or Less. Only needed for New Courses or Title Changes.)

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

Present: Data mining and knowledge discovery utilizes both classical and new algorithms, such as machine learning and neural networks, to discover previously unknown relationships in data. Key data mining issues to be addressed include knowledge representation and knowledge acquisition (automated learning).

Proposed: Advanced topics of current interest in the field of data mining. This course involves reading seminal and state-of-the-art papers as well as conducting topical research projects including design, implementation, experimentation, analysis, and written and oral reporting components.

5. If course requires field trip check box: ☐

6. Credit Hours:				
	Present:	**Lecture:** 3	**Lab:** 0	**Total:** 3
	Proposed:	**Lecture: 3**	**Lab: 0**	**Total: 3**

7. Prerequisites:

Present: (Comp Sci 338 or Comp Sci 347) and Stat 215

Proposed: Comp Sci 301 Introduction to Data Mining

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

9. Justification: The introductory material that used to be covered in this course is now being covered in Comp Sci 301 Introduction to Data Mining, allowing this course to focus more on the advanced material. This is the CpE 404 and SysEng 404 co-list companion CC form to the CC form for Comp Sci 444.

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) CmpSc ~~444~~ ~~434~~ 444 **2)** SysEng 404 DLE **3)**

4) **5)** **6)**

Recommended by Department Kelly Erickson (Chair signature) Date: 9 July 2012

Recommended by Discipline Specific Curricula Committee Stephen Ropa (Chair signature) Date: 8-26-12

Approved by Curricula Committee: Daniel Fawcett (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

CC File #9268-2012-CS434-33

Effective Year: 2013
Term: Summer ☐ Fall ☐ Spring ☒

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

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

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

1. **Department:** Computer Science
2. **Discipline and Course Number:** **Present:** Comp Sci 434 **Proposed:** Comp Sci 444
3. **Course Title:** **Present:** Data Mining & Knowledge Discovery
   Proposed: Advanced Topics in Data Mining
   Abbreviated Course Title: Adv. Data Mining Topics
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present: Data mining and knowledge discovery utilizes both classical and new algorithms, such as machine learning and neural networks, to discover previously unknown relationships in data. Key data mining issues to be addressed include knowledge representation and knowledge acquisition (automated learning).
   Proposed: Advanced topics of current interest in the field of data mining. This course involves reading seminal and state-of-the-art papers as well as conducting topical research projects including design, implementation, experimentation, analysis, and written and oral reporting components.
5. **If course requires field trip check box:** ☐
6. **Credit Hours:**

Present:	**Lecture:** 3	**Lab:** 0	**Total:** 3
Proposed:	**Lecture:** 3	**Lab:** 0	**Total:** 3

7. **Prerequisites:**
   Present: (Comp Sci 338 or Comp Sci 347) and Stat 215
   Proposed: Comp Sci 301 Introduction to Data Mining
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** The introductory material that used to be covered in this course is now being covered in Comp Sci 301 Introduction to Data Mining, allowing this course to focus more on the advanced material.
10. **Semesters previously offered as an experimental course (101, 201, 301, 401):**
11. **List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.**
    1) CpE 404 DLE 2) SysEng 404 DLE 3)
    4) 5) 6)

Recommended by Department _____ (Chair signature) Date: June 28, 12

Recommended by Discipline Specific Curricula Committee David Faith (Chair signature) Date: 9/7/2012

Approved by Curricula Committee: David Faith (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

CC File # 8271-2012-TCom-411-53

Effective Year: 2013
Term: Summer ☐ Fall ☐ Spring ☒

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

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

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

1. **Department:** English and Tech Com
2. **Discipline and Course Number:** **Present:** TCH COM 411 **Proposed:** TCH COM 411
3. **Course Title:** **Present:** International Technical Communication
   Proposed: Adv International Technical Communication
   Abbreviated Course Title: Adv International Tech Com
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present: TCH COM 411 Examines complexity of communication of technical information worldwide. Includes topics such as graphics, icons, symbols; user interface design; intercultural communication.
   Proposed: Advanced study of international technical communication. Includes topics such as graphics, icons, symbols; user interface design; intercultural communication. Requires field work at student's expense. Students may not earn credit for both TCH COM 311 and TCH COM 411.
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: Graduate Standing
   Proposed:
8. **Required for Majors:** ☒ **Elective for Majors:** ☐
9. **Justification:** May be taught concurrently with TCH COM 311. Graduate students will do additional work and be held to a higher standard for assessment. See CC 7701 2009 for an example of this type of concurrent offering.
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: 8/9/12
Recommended by Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8/17/12
Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012
Approved by Faculty Senate: _____ (Chair signature) Date: _____

(Revised 1/29/09)

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Effective Year: 2013
Term: Summer ☐ **Fall** ☐ **Spring** ☒

CC File # 8272-2012-CS-256-3.2

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 :** Comp Sci 256 **Proposed:**
3. **Course Title:** **Present:** **Programming Languages and Translators**
   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: Covers basic design of programming languages, compilers and interpreters. The concepts of syntax, variables, expressions, types, scope, functions, procedures, statements, I/O, exception handling and concurrency are introduced. The manner in which various programming languages handle these concepts is discussed.
   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: Comp Sci 153
   Proposed: Comp Sci 220
8. **Required for Majors:** ☒ **Elective for Majors:** ☐
9. **Justification:** Before taking this course, students should be introduced to topics such as grammars that are covered in Comp Sci 220 (Theory of Computer Science). Comp Sci 153 (Data Structures) is a prerequisite for Comp Sci 220, so it no longer needs to be listed as a prerequisite for Comp Sci 256.
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: Jun 26, 12

Recommended by Discipline Specific Curricula Committee David Smith (Chair signature) Date: 9/7/2012

Approved by Curricula Committee: David Smith (Chair signature) Date: 10/5/2012

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

(Revised 1/20/09)

Effective Year: FS2013
Effective Term: **Summer** ☐ **Fall** ☒ **Spring** ☐

CC File # 8274-2012-EE-392-32

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:** Electrical & Computer Engineering
2. **Discipline and Course Number:** **Present :** EE 392 **Proposed:**
3. **Course Title:** **Present:** **Electrical Engineering Senior Project II**
   Proposed:
   Abbreviated Course Title:
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(40 Words or Less)*
   Present: A continuation of El Eng 391.

   Proposed:

5. **If course requires field trip check box:** ☐
6. **Credit Hours:** **Present:** **Lecture:** 0 **Lab:** 3.0 **Total:** 3.0
   Proposed: **Lecture:** **Lab:** **Total:**
7. **Prerequisites:**
   Present: El Eng 391.

   Proposed: El Eng 391 with a grade of "C" or better.

8. **Required for Majors:** ☒ **Elective for Majors:** ☐
9. **Justification:** Modification to Undergraduate EE Requirements per ECE Faculty 4/16/2012.

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 Kelly Erwin (Chair signature) Date: 13 Aug 2012

Recommended by Discipline Specific Curricula Committee Shuling Ruan (Chair signature) Date: 8-26-12

Approved by Curricula Committee: Daniel Fricke (Chair signature) Date: 10/5/2012

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

Effective Year: 2013 **CC File #**8275-2012-CS-445-32
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:** Computer Science
2. **Discipline and Course Number:** Present : CmpSc 445 Proposed:
3. **Course Title:** Present: Robotic Sensors And Controls
   Proposed: Advanced Topics in Robotics

   Abbreviated Course Title: Adv. Topics in Robotics
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*

   Present: State-of-the-art topics in robotics control and sensory systems. Robotic sensors: position and proximity sensors, touch, force and torque sensors, and robotic vision implementations. Computer control: robotic software tools and techniques and embedded microprocessors.

   Proposed: This course covers advanced topics in robotics, including perception, robotic path planning, robotic system integration, and computational intelligence topics for robotics. A term project including both written and oral components will be required.
5. **If course requires field trip check box:** ☐
6. **Credit Hours:**

Present:	Lecture: 3	Lab:	Total: 3
Proposed:	Lecture:	Lab:	Total:

7. **Prerequisites:**
   Present: CmpSc 345

   Proposed: A "C" or better in either CmpSc 345 or ME 349 or AE 349
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** The proposed changes are consistent with the changes being proposed to this course's principal prereq, CmpSc 345, thus forming a well coordinated sequence.
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) CpE 488 KTC 2) 3)
4) EE 488 KTC 5) 6)

Recommended by Department [signature] (Chair signature) Date: Aug 15, 12
Recommended by Discipline Specific Curricula Committee [signature] (Chair signature) Date: 9/7/2012 / 9/17/12
Approved by Curricula Committee: [signature] (Chair signature) Date: 10/5/2012
Approved by Faculty Senate: ____ (Chair signature) Date: ____

(Revised 1/29/09)

CC File #8276-2012-EE-488-10

Effective Year: 2013
Term: Summer ☐ **Fall** ☐ **Spring** ☒

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

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

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

1. **Department:** Electrical and Computer Engineering
2. **Discipline and Course Number:** **Present :** **Proposed:** EE 488
3. **Course Title:** **Present:**
   Proposed: Advanced Topics in Robotics
   Abbreviated Course Title: Adv. Topics in Robotics
   (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 advanced topics in robotics, including perception, robotic path planning, robotic system integration, and computational intelligence topics for robotics. A term project including both written and oral components will be required.

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:

   Proposed: A "C" or better in either CmpSc 345 or ME 349 or AE 349

8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** This forms adds EE 488 as a co-listing for CmpSc 445.

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) CmpSc 445 DCH 2) 3)

4) CpE 488 KJE 5) 6)

Recommended by Department Kelly Erickson (Chair signature) Date: 15 Aug 2012

Recommended by Discipline Specific Curricula Committee Wayne Rupee (Chair signature) Date: 8-26-12

Approved by Curricula Committee: Daniel Finke (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

CC File #8277-2012-CpE-488-10

Effective Year: 2013
Term: Summer ☐ Fall ☐ Spring ☒

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

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

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

1. **Department:** Electrical and Computer Engineering
2. **Discipline and Course Number:** **Present :** **Proposed:** CpE 488
3. **Course Title:** **Present:**
   Proposed: Advanced Topics in Robotics
   Abbreviated Course Title: Adv. Topics in Robotics
   (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 advanced topics in robotics, including perception, robotic path planning, robotic system integration, and computational intelligence topics for robotics. A term project including both written and oral components will be required.

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:

   Proposed: A "C" or better in either CmpSc 345 or ME 349 or AE 349

8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** This forms adds CpE 488 as a co-listing for CmpSc 445.

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) CmpSc 445 DRN 2) 3)

4) EE 488 JKJE 5) 6)

Recommended by Department Helen Erwin (Chair signature) Date: 15 Aug 2012

Recommended by Discipline Specific Curricula Committee Steph Rapa (Chair signature) Date: 8-26-12

Approved by Curricula Committee: Daniel Faith (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: 2013
Term: Summer ☐ **Fall** ☐ **Spring** ☒

CC File # 8278-2012-IST-3 55-10

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 :** **Proposed:** IST 335
3. **Course Title:** **Present:**
   Proposed: Fundamentals of Mobile Technology for Business
   Abbreviated Course Title: Fund Mobile Tech for Bus
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present:

   Proposed: A broad overview of mobile technology use in business environments. Topics include the mobile industry; mobile network & wireless standards; mobile devices; mobile web design & app development; social & user experience issues; mobile marketing & commerce. Cannot take both IST 335 and IST 435.
5. **If course requires field trip check box:** ☐
6. **Credit Hours:** **Present:** **Lecture:** **Lab:** **Total:**
   Proposed: **Lecture: 3.0** **Lab:** **Total: 3.0**
7. **Prerequisites:**
   Present:

   Proposed: IST 223, and IST 233
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** This becomes an undergraduate version of the existing Graduate Course, which is re-titled and changed slightly. Additional work is required for the graduate course (IST 435). This course will be a part of a new Minor, to be proposed for Fall 2013.
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: 8/27/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 9/4/2012

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: 2013
Term: **Summer** ☐ **Fall** ☐ **Spring** ☒

CC File # 8279-2012-IST-435-52

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 :** IST 435 **Proposed:**
3. **Course Title:** **Present: Mobile Data Management**
   Proposed: Mobile Technology for Business
   Abbreviated Course Title: Mobile Tech for Business
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*
   Present: This course will describe and evaluate various wireless transmission techniques, communication network components and their characteristics, networking protocols, and network architectures. Appraise their use in existing and evolving applications, along with the management implications of such use.
   Proposed: Overview of mobile technology use in business environments. Topics include: mobile industry; mobile network & wireless standards; mobile devices; mobile web design & app development; social & user experience issues; mobile marketing & commerce. Project req'd. Cannot take both IST 335 and IST 435.
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: Graduate standing
   Proposed: IST 223 or equivalent, IST 233 or equivalent, Graduate standing
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** The new description & title keeps up with technology trends. M.S. students in IST would have the prereqisites, but others might not, so they are stated. An undergraduate version of the course (IST 335) is being proposed as well. Additional work (semester project) is required for this course beyond the undergraduate 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: 9/27/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 9/4/2012

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

(Revised 1/29/09)

Effective Year: ~~2012~~ 2013
Effective Term: Summer ☒ Fall ☐ Spring ☒

EC File # 2414-552012-GE-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: Geological Science and Engineering

Discipline and Course Number: GE 301

Course Title: Soil Mechanics for GeoProfessionals

Abbreviated Title *(24 spaces or less)*: Geo Soil Mech

Instructor(s): Ronaldo Luna

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

Prerequisites: A course in Statics and Mechanics of Materials ~~or consent of instructor~~

Semester(s) previously taught: none

Brief Course Description: (40 words or less)
The basic principles of soil mechanics necessary for professionals to practice in the field of geoconstruction. Topics related to the practical aspects of engineering include: soil classification, index properties, water flow through soils, compaction, compressibility, and shear strength. These basic principles will be applied to real world geoconstruction problems.

This course is for distance ed./ Fort Leonard Wood graduate students only.

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: Ralph Flow (Chair Signature) Date: 4-3-12

Discipline Specific Curricula Committee: Stephen Rogers (Chair signature) Date: 8-26-12

Curricula Committee: Daniel Smith (Chair Signature) Date: 10/5/2012

EC File # 2415-Sp2013-Pol Sci-301

Effective Year: 2013
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: History and Political Science

Discipline and Course Number: Pol. Sci. 301

Course Title: Constitutional Law: Government Powers and Civil Liberties

Abbreviated Title *(24 spaces or less)*: Constitutional Law

Instructor(s): John Wiggins

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

Prerequisites: one of Pol. Sci. 90, History 112, 175, ~~or~~ 176

Semester(s) previously taught:

Brief Course Description: (40 words or less)
This course will examine constitutional powers of American governmental institutions and leading Supreme Court decisions dealing with civil liberties including speech, religion, equal protection and the rights of the accused. The course will include the study of current political issues and problems relating to these foundational civil liberties.

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: 6/13/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8/17/12

Curricula Committee: _____ (Chair Signature) Date: 10/5/2012

(Revised 10/12/2010)

06/13/12

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Effective Year: 2013
Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2416-Sp2013-MinE-301

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 & Nuclear Engineering

Discipline and Course Number: MIN Eng 301

Course Title: Advanced Mineral Exploration

Abbreviated Title *(24 spaces or less)*: Adv Mineral Exploration

Instructor(s): Cheryl Seeger

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

Prerequisites: Geology 125 and Min Eng 110

Semester(s) previously taught:

Brief Course Description: (40 words or less)
In depth examination of mineral deposit exploration and ~~evaulation~~ evaluation techniques. Geostatistical methods of ore reserve modeling; factors examined will include statistical data distributions, cut off grade, dilution and ore continuity. Evalute sampling methods. Review major ore deposit types, data manipulation, data quality issues and data presentation. Case studies will be evaluated.

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: 06/10/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8-26-12

Curricula Committee: Daniel Smith (Chair Signature) Date: 10/5/2012

Effective Year: 2013
Effective Term: Summer ☐ ~~**Fall**~~ ☒ **Spring** ☒

EC File # 2417-FS2013-ExpEng-301

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 & Nuclear Engineering

Discipline and Course Number: ExpEng 301

Course Title: Display fireworks manufacturing

Abbreviated Title *(24 spaces or less)*: Fireworks manufacturing

Instructor(s): Stephen Hall

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

Prerequisites: Chem 1, Chem 2, Chem 4, Econ 121, Econ 122, ONE OF Eng Mgt 137, Successful background check.

Semester(s) previously taught: FS2012

Brief Course Description: (40 words or less)
Theory and practice of manufacturing display fireworks. Focusing on safety, chemical interaction, color development, basic theory, state and federal law. The lab will include hands on building of ball and cansister shells and other pyrotechnic effects.

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: 06/10/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8-26-12

Curricula Committee: _____ (Chair Signature) Date: 10/5/2012

EC File # 2418-Sp2013-Hist-301

Effective Year: 2013
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: History and Political Science

Discipline and Course Number: History 301

Course Title: The Cultural History of Economic Depression in America

Abbreviated Title *(24 spaces or less)*: Depressions in America

Instructor(s): Dr. Susan Curtis

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

Prerequisites: History 112, History 176, or Political Science 90

Semester(s) previously taught:

Brief Course Description: (40 words or less)
From the depression of the 1890s to the Great Depression of the 1930s and ending in the present, this course introduces students to the ties between art, politics, and hard times in America

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: 6/7/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8/17/12

Curricula Committee: _____ (Chair Signature) Date: 10/5/2012

06/06/12

(Revised 10/12/2010)

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EC File # 2419-Sp2013-Hist-301

Effective Year: 2013
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: History and Political Science

Discipline and Course Number: History 301

Course Title: The History of Christianity and Islam

Abbreviated Title *(24 spaces or less)*: Christianity and Islam

Instructor(s): Dr. Michael Bruening

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

Prerequisites: History 111 or History 112

Semester(s) previously taught: Fall 2010

Brief Course Description: (40 words or less)
This course will trace the origins, development, and interaction of the world's two largest religions to the present day. Special emphasis will be placed on the religions' cultural and intellectual contributions to civilization, as well as to the military and cultural conflicts between the two faiths.

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: 6/7/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8/17/12

Curricula Committee: _____ (Chair Signature) Date: 10/5/2012

06/08/12 (Revised 10/12/2010)

Effective Year: 2013
Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2420-FS2013-Math-301

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: Mathematics and Statistics

Discipline and Course Number: Math 301

Course Title: Introduction to Numerical Methods for Differential Equations

Abbreviated Title *(24 spaces or less)*: Numerical Diff Eqns

Instructor(s): John Singler, Yanzhi Zhang

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

Prerequisites: Math 204 and programming competency

Semester(s) previously taught: n/a

Brief Course Description: (40 words or less)
An introduction to finite difference methods for ordinary and partial differential equations; including (1) the derivation of the numerical methods, (2) implementation of the methods in Matlab, and (3) the mathematical accuracy and stability analysis of the methods.

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: Leon Hall (Chair Signature) Date: 5/4/2012

Discipline Specific Curricula Committee: Daniel Faust (Chair signature) Date: 9/7/2012

Curricula Committee: Daniel Faust (Chair Signature) Date: 10/5/2012

Effective Year: 2013
Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2421-Sp2013-MiN-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: 401 (Min Eng)

Course Title: Heavy Mining Machinery Maintenance and Fatigue

Abbreviated Title *(24 spaces or less)*:

Instructor(s): Nassib Aouad

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

Prerequisites: Graduate standing

Semester(s) previously taught: None

Brief Course Description: (40 words or less)
Heavy machinery optimization, utilization and reliability. Fatigue analysis and fracture mechanics overview; equipment usage and generation of stress conditions that influence fatigue strength and stress concentrations leading to fracture. Fatigue life and longevity of machinery.

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: 06/25/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8/26/12

Curricula Committee: _____ (Chair Signature) Date: 10/5/2012

Effective Year: 2013
Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2422-Sp2013-MiN-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: 401 (MiN Eng)

Course Title: Mine Automation

Abbreviated Title *(24 spaces or less)*: Mine Automation

Instructor(s): Nassib Aouad

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

Prerequisites: Graduate standing

Semester(s) previously taught: None

Brief Course Description: (40 words or less)
Introduction of automation and robotics into mine environments. The role of automated equipment in the mining industry. Design of automated mine with emphasis on availability, utilization and reliability of unmanned equipment. Theory and practice of fleet management and preventive maintenance scheduling.

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: 08/25/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 08/26/12

Curricula Committee: _____ (Chair Signature) Date: 10/5/2012

Effective Year: 2013
Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2423-Sp2013-MiN-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: 401 (MiN Eng)

Course Title: Mining Machinery Event Simulation

Abbreviated Title *(24 spaces or less)*: Mining Mac Event Sim

Instructor(s): Nassib Aouad

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

Prerequisites: Graduate standing

Semester(s) previously taught: None

Brief Course Description: (40 words or less)
Introduction to heavy mining machinery kinematics and dynamics. Computer modeling for assessing machinery behavior under extreme operating conditions; virtual prototype simulation of mechanical components to increase utilization productivity and reliability.

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: 06/25/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8-26-12

Curricula Committee: _____ (Chair Signature) Date: 10/5/2012

Effective Year: 2013
Effective Term: Summer ☐ **Fall** ☐ **Spring** ☒

EC File # 2424-SP2013-EE-301

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: Elect. and Comp. Engineering

Discipline and Course Number: EE301

Course Title: Introduction to Radar Systems

Abbreviated Title *(24 spaces or less)*: Intro. to Radar Systems

Instructor(s): Reza Zoughi

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

Prerequisites: EE271 & EE217

Semester(s) previously taught: None

Brief Course Description: (40 words or less)
Introducing fundametal principles of radar system design 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: Kelly Emslie (Chair Signature) Date: 26 July 2012

Discipline Specific Curricula Committee: [signature] (Chair signature) Date: 8-26-12

Curricula Committee: David Jackson (Chair Signature) Date: 10/5/2012

07/26/12 (Revised 10/12/2010)

EE301 – Spring 2013
Introduction to Radar Systems

Course Objectives

The goal of this course is to introduce senior and early graduate students to various radar system principles, designs and applications. Topics related to signals, systems, noise, resolution, multiple sampling, speckle, remote sensing will also be discussed.

Text

"*Principles of Modern Radar*", M.A. Richards, J.A. Scheer and W.A. Holm, SciTech Publishing, Inc.

Project

As a significant part of the course requirements, there will be a class project performed in teams involving the paper-design of a complete radar system for a specific application such as a weather radar for small aircraft, altimeter for small aircraft, etc. This may also involve a student in each group from Engineering Management/Marketing department since each group will actually be treated as a small company competing for the same objective.

Grading: Two exams (one may be a take-home), 25% each
Course project, 25%
Regularly assigned homework, 25%.

Intended Course Topics

- Background, history and application of modern radar development
- Radar equation
- Radar cross-section (RCS) and scattering coefficient (for point and area-extensive targets)
- Signal, noise, S/N, clutter
- Noise and signal PDF's
- Atmospheric issues at microwave frequencies (i.e., oxygen and water vapor absorption bands)
- Signal averaging, coherent and incoherent integration
- Matched filter detection
- Complex targets
- RCS fluctuations
- Unambiguous range measurement
- Doppler effect, Doppler shift for horizontal travel (Isodops)
- CW, multiple-frequency CW radars
- Receiver bandwidth requirements and issues
- Frequency-Modulated Continuous-Wave (FM-CW) radars
- Resolution volume
- Amplitude weighting for target sidelobe reduction
- Calibration of FM-CW radars for absolute RCS measurements and remote sensing
- Calibration targets (flat metal plate, metal sphere, corner reflectors, Luneberg lens)
- MTI Radars

- Delay line cancelers (single, double and multiple cancelers)
- Multiple or staggered PRF
- Clutter attenuation
- Tracking radars (sequential lobing, conical scan, amplitude comparison monopulse)
- Remote sensing radars
- Side-looking Aperture Radar (SLAR)
- Speckle and fading
- Multiple independent samples
- General mechanism of scattering (smooth surface, rough surface, volume scattering)
- Smoothness criterion (Rayleigh criterion)
- Bragg resonance
- Hard targets
- Synthetic Aperture Radar (SAR)
- Focused and unfocused SAR
- Radar imaging principles
- Geometrical distortions in an image
- Chirp radar
- Pointing problems in dual antenna systems
- Ground penetrating radars

Other topics may also be covered or interchanged with some of those listed above.

planning to offer every even Spring

Effective Year: 2014
Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2425-Sp2014-MiN-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: Mi Eng 401

Course Title: Geostatistics

Abbreviated Title *(24 spaces or less)*: Geostatistics

Instructor(s): Kwame Awuah-Offei

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

Prerequisites: Graduate standing ~~or consent~~

Semester(s) previously taught: SP2012 (2210-SP2011-MiEng401)

Brief Course Description: (40 words or less)
Definition of geostatistical data; theory of random fields; autocorrelation and ~~measures~~ measures of spatial variability including semivariograms, variograms and covarience 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.
1) **2)** **3)**

4) **5)** **6)**

Department Chair: _____ (Chair Signature) Date: 07/06/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8/26/12

Curricula Committee: Daniel Smith (Chair Signature) Date: 10/5/2012

07/03/12 (Revised 10/12/2010)

EC File #2426-Sp2013-PolSci-301

Effective Year: 2013
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: History and Political Science

Discipline and Course Number: Pol. Sci. 301

Course Title: Politics of the Middle East

Abbreviated Title *(24 spaces or less)*: Middle East Politics

Instructor(s): Dr. Tsaggai Isaac

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

Prerequisites: One of Political Science 90, 225, 226, ~~or~~ History 176

Semester(s) previously taught:

Brief Course Description: (40 words or less)
Politics of the Middle East explores the significant events that have framed modern political realties in the Middle East. The course will begin with the end of the Ottoman Empire in the First World War and then explore the colonial experiences of the Middle Eastern people under British and French rule and the post-colonial geostrategic alignments and the creation of the State of Israel.

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: 7/5/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8/17/12

Curricula Committee: _____ (Chair Signature) Date: 10/5/2012

07/05/12 (Revised 10/12/2010)

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Effective Year: 2013
Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2428-Sp2013-Engl-301

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: English & Tech Com

Discipline and Course Number: English 301

Course Title: Myth ~~&~~ and Folklore

Abbreviated Title *(24 spaces or less)*: Myth ~~&~~ and Folklore

Instructor(s): Bryan, Eric

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

Prerequisites: Eng 20 and one semester of college literature

Semester(s) previously taught: n/a

Brief Course Description: (40 words or less)
This course traces the development of myth and folklore from Ancient Mesopotamia through nineteenth century Europe. Students will be challenged with three questions along the way: What do myth and folklore do? Why were they important to earlier societies? Is myth alive today?

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: 7/16/12

Discipline Specific Curricula Committee: _____ (Chair signature) Date: 8/17/12

Curricula Committee: _____ (Chair Signature) Date: 10/5/2012

07/13/12 (Revised 10/12/2010)

Myth and Folklore
English 2xx/3xx
Spring/Fall Semester 201x
Dr. Eric Bryan
Class Location:

Office: H-SS 221
Office Hours:
Email: bryane@mst.edu
Phone: 573.341.4622
Class Time:

Required materials

Eyrbyggja Saga. Trans. Herman Pálsson and Paul Edwards. Penguin Classics, 1989.

Caitlin and John Matthews, eds. *The Encyclopaedia of Celtic Myths and Legends*. Guilford, CN: The Lyons Press, 2004.

Snorri Sturluson. *The Prose Edda: Norse Mythology*. Trans. Jesse Byock. Penguin Classics, 2005.

A Large Quantity of Selected Readings. (Found on Blackboard).

Course Description

The modern world tends to view myth and folklore with a skeptical eye. Myth has variously been understood as a lie, a metaphor, a script for ritual, or outdated narrative meant to preserve cultural meanings and morals. Folk and fairy tales are typically seen as little more than children's stories, "old wives' tales," or campfire fodder. The cultures who subscribe to myths have been viewed as primitive, and those who attend to folktales are generally thought to be naïve, outdated, or uneducated.

Yet, myth and folklore, however they may now be described, seem to have served a vital function in every society that has ever called itself human . . . with the exception of our own. This course tests our modern skepticism about myth and folklore, tracing their development from the earliest sources in Ancient Mesopotamia through Europe and up to the nineteenth century, when our modern world might be said to have begun—and when myth might be said to have died. Students will be asked to answer three essential questions along the way: 1) What do myth and folklore *do*? 2) Why was it so important to those long-gone societies? 3) Is myth alive anywhere today?

[Brief description: This course traces the development of myth and folklore from Ancient Mesopotamia through nineteenth century Europe. Students will be challenged with three questions along the way: What do myth and folklore *do*? Why were they important to earlier societies? Is myth alive today?]

Student Responsibilities

Class Participation (10%): Active discussion of the reading is vital to success in this course.

Three Quizzes (total: 15%): Students must master a few essential concepts of folklore and mythology in order to write a successful research paper. The three quizzes verify that students have a sufficient understanding of these concepts to proceed with their research.

Preliminary Study (15%): A 4 or so page essay meant to act as a proposal for the research project. Rather than selecting a particular text (unless one is quite certain), I suggest conducting the preliminary study on a certain issue or folk motif. For instance, a student who wishes to write on the role of gender in mythology should therefore present an overview of relevant thoughts on the issue, as well as explain why further analysis will contribute to those thoughts. Students will generally be expected to use this study as a springboard for the research project. (Note: A bibliography of secondary materials will be posted online to assist students with this essay. I strongly recommend selecting sources from this bibliography.)

Midterm and Final Examinations (20% each): Both the midterm and final examinations test the students' knowledge of the primary sources studied throughout the course. Students will use examples from the sources to answer questions on concepts discussed during class time.

Research Project (20%): 7 or so page essay meant to contribute original thought to the study of myth and folklore in the Middle Ages. Though I prefer students to write on one of the essential questions of the class, I will occasionally permit students to branch out into ancillary issues. Using the preliminary study to create a critical and cultural context, students should present a well-balanced, focused thesis by examining several texts discussed in class. (Note: It will be acceptable to move in a new direction for the research project, but only with my approval. Obviously changing topic will put the student at a disadvantage.)

OTHER CONSIDERATIONS

Attendance: Students are expected to attend class. A student's grade will be lowered ½ a letter grade for each unexcused absence above five. Missing more than 15% of classes may result in a failing grade. If the student surpasses the allotted number of absences, the instructor reserves the right to reflect absences in final grades based on his/her interpretation of the individual student's circumstances and overall performance in the course.

Tardiness: Students who are late three times will accumulate an absence. Students who are more than fifteen minutes late to class are considered absent. Students should also be aware that it is their responsibility to consult the instructor about missed work and class. If students have a serious situation that prevents them from meeting deadlines or being in class on time, students should seek a conference with the instructor of the course to discuss options/solutions to the problem. If students arrive late but before the fifteen

minute cut-off, they are responsible for checking with the instructor, after class, to ensure they are not counted absent.

Late Papers and Assignments: Students should plan to turn in assignments at the beginning of the appropriate class period. Students are also responsible for having completed readings by the dates and times assigned. Failure to complete and submit work by the deadline may result in the loss of some credit for the work. These penalties vary with respect to the importance of the assignment. Students will lose ½ of a letter grade for each day the essay is late, and smaller assignments will be penalized on a case-by-case basis. As with attendance, requests for excused late submittals must be accompanied by documentation of a medical problem, a personal emergency, or a university obligation. Note: having an absence excused does not necessarily mean that the instructor will accept a late submittal without a penalty – each is a separate matter. Students who know in advance that they will miss class should expect to submit their work early if they cannot submit it on time (or they should arrange for the delivery of that work so that it is submitted on time).

Classroom Etiquette: Because a productive learning environment is essential to all members of the class, I assume that polite and considerate behavior will be the norm in all classrooms. No perspectives will be ignored in our classroom. While I encourage aggressive and sincere responses in our discussion, I also expect all of us to speak courteously and articulately with one another. When investigating and evaluating perspectives different from a one's own values, we must conduct ourselves and respond to others in a respectful manner. **NOTE: PLEASE TURN OFF CELL PHONES AND PAGERS BEFORE COMING TO CLASS.**

Academic Honesty: Students are expected to be honest in their academic work. If you plagiarize or commit any form of academic dishonesty and are caught, you may face severe penalties, including, but not limited to, a failing grade for the assignment, a failing grade in the course, disciplinary probation, suspension, or expulsion from the University. In addition, you are ethically responsible to report any incidents of plagiarism of which you are aware. If you are unsure of what constitutes academic dishonesty, see the MST website on student standards of conduct at http://studentlife.mst.edu/organizations/handbook/standard.html. Also see Page 30 of the Student Academic Regulations Handbook, found at the website registrar.mst.edu/academicregs/index.html, which offers descriptions of academic dishonesty including cheating, plagiarism or saborage.

USEFUL INFORMATION

Academic Alert System: If you are in danger of failing the course, I will use the Academic Alert System to notify you and your advisor. The purpose of this system is to improve your overall academic success by informing you and your supporting faculty of your need to get some help with your coursework.

Academic Support Programs: The University offers a range of facilities to help you learn how to study better. Check out the home page of Academic Support Programs, http://learn.mst.edu and learn about getting an individual "Learning Consultation," about "Resource Learning Centers" and the Student Learning Centers for quiet study.

Disability support services: If you have a documented disability and anticipate needing accommodations in this course, please meet with me at the beginning of the semester. You will need to request that the Disability Support Services staff send a letter to me verifying your disability and specifying the accommodation you will need. The Disability Support Services (http://dss.mst.edu) is located in 204 Norwood Hall (341-4211, and their e-mail is dss@mst.edu.

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Tentative Reading Schedule:

UNIT 1: FOLKLORISTICIS AND MYTHOLOGY

Week 1
Richard M. Dorson. "The Eclipse of Solar Mythology." *The Study of Folklore*. Ed. Alan Dundes. Prentice-Hall: 1965. 57-83.
Lord Raglan. "The Hero of Tradition." *Folklore*, Vol. 45, No. 3. (Sep., 1934), pp. 212-231.

Week 2
Mercia Eliade. "The Structure and Morphology of the Sacred." *Patterns in Comparative Religion*.
Jan Assmann, *Cultural Memory and Early Civilization* (excerpt on Blackboard)

UNIT 2: CREATION AND CIVILIZATION IN THE NEAR EAST

Week 3
Genesis 1-3, *Enuma Elish*, *Prose Edda*; *The Epic of Gilgamesh*, Genesis 1-6 (excerpts on Blackboard)

Week 4
Upanishads (excerpts on Blackboard)

UNIT 3: PREHISTORY IN BRITAIN, DENMARK, AND SWEDEN

Beaker People, Stonehenge, and Mithras (excerpts on Blackboard)
Julius Caesar. *The Battle for Gaul*. Trans. Anne and Peter Wiseman. David R. Godine: 1980. 120-25. (on Blackboard)
Introduction. Caitlin and John Matthews, eds. *The Encyclopaedia of Celtic Myths and Legends*. Guilford, CN: The Lyons Press, 2004. 1-10.

UNIT 3: CELTIC AND WELSH SOURCES

Week 5
"Selections from the Book of Invasions." Caitlin and John Matthews, eds. *The Encyclopaedia of Celtic Myths and Legends*. Guilford, CN: The Lyons Press, 2004. 11-16.

Week 6
"The First Battle of Moytura." Caitlin and John Matthews, eds. *The Encyclopaedia of Celtic Myths and Legends*. Guilford, CN: The Lyons Press, 2004. (excerpts on Blackboard)
"The Second Battle of Moytura." Caitlin and John Matthews, eds. *The Encyclopaedia of Celtic Myths and Legends*. Guilford, CN: The Lyons Press, 2004. (Excerpts on Blackboard)

"The Boyhood Deeds of CúChulainn." Caitlin and John Matthews, eds. *The Encyclopaedia of Celtic Myths and Legends*. Guilford, CN: The Lyons Press, 2004. 153-165.
"The Cattle Raid of Cooley." Caitlin and John Matthews, eds. *The Encyclopaedia of Celtic Myths and Legends*. Guilford, CN: The Lyons Press, 2004. 91-110.

Week 7
"The Wooing of Emer." Caitlin and John Matthews, eds. *The Encyclopaedia of Celtic Myths and Legends*. Guilford, CN: The Lyons Press, 2004. 345-68.
"The Sick-Bed of CúChulainn." Caitlin and John Matthews, eds. *The Encyclopaedia of Celtic Myths and Legends*. Guilford, CN: The Lyons Press, 2004. 195-218.

Week 8
"Peredur, Son of Evrawg." *The Mabinogion*. Trans. Jeffrey Gantz. New York: Dorset Press, 1976. 217-57.
"Owein (or the Countess of the Fountain)." *The Mabinogion*. Trans. Jeffrey Gantz. New York: Dorset Press, 1976. 192-216.
"Pwyll, Lord of Dyved." *The Mabinogion*. Trans. Jeffrey Gantz. New York: Dorset Press, 1976. 45-65.
Arthurian Excerpts (on Blackboard)

Week 9
Tuesday. (paper 1 due). HW:
Catch-up and review for Midterm Examination.
MIDTERM EXAMINATION.

UNIT 4: GERMANIC SOURCES

Week 10
Jakob Grimm, *Teutonic Mythology* (Excerpts on Blackboard)
Brothers Grimm, *Fairy Tales* (Excerpts on Blackboard)
The philological question and the nineteenth century folklore movement

Week 11
Jakob Grimm, *Teutonic Mythology* (Excerpts on Blackboard)
Grimm Brother, *Grimms' Fairy Tales* (Excerpts on Blackboard)
Anglo Saxon lore (Excerpts on Blackboard)

UNIT 5: NORSE SOURCES

Week 12
Eyrbyggja Saga. Trans. Herman Pálsson and Paul Edwards. Penguin Classics, 1989.
Snorri Sturluson. *The Prose Edda: Norse Mythology*. Trans. Jesse Byock. Penguin Classics, 2005.

Week 13
Scandinavian folklore collection (Excerpts on Blackboard)

UNIT 6: WITCHCRAFT AND NEO-PAGANISM

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Week 14
Malleus Maleficarum (trans.: *The Hammer of Witches*; excerpts on Blackboard)

Week 15
Witchcraft in England, Germany, and Scandinavia. Margaret Murray and the neo-pagan movement

Final Exam: TBA

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Effective Year: 2013
Effective Term: Summer ☐ Fall ☐ Spring ☒

EC File # 2429-Sp2013-Engl-301

Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved SP2007 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: English and Tech Com

Discipline and Course Number: English 301

Course Title: GLOBAL FOODS IN LITERATURE

Abbreviated Title *(24 spaces or less)*: GLOBAL FOODS IN LIT

Instructor(s): Kathryn Dolan

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

Prerequisites: Eng 20 and one semester of college literature

Semester(s) previously taught: n/a

Brief Course Description: (40 words or less)
Food is where culture meets nature. The need for food is universal, but cuisine is potently regional. We will look at writers such as Hemingway, Kincaid, Bourdain, and the criticism of Bourdieu, Giganta, and Geertz to study key cultural issues.

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's signature) Date: 8/6/12

Discipline Specific Curricula Committee: _____ (Chair's signature) Date: 8/17/12

Curricula Committee: _____ (Chair's signature) Date: 10/5/2012

08/06/12 (Revised 10/12/2010)

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GLOBAL FOODS: THE CARIBBEAN
SPRING 2013
Syllabus and Class Schedule

Contact Information

Instructor: Kathryn Dolan
Class Time:
Location:
Email: dolankc@mst.edu
Office:
Office hours:
Mailbox: English Office

Required Texts (available at bookstore)

Anthony Bourdain, *Gone Bamboo*
Ernest Hemingway, *The Old Man and the Sea*
Holly Hughes, *Best Food Writing, 2011*
Jamaica Kincaid, *A Small Place*
Sidney Mintz, *Sweetness and Power*
Tom Standage, *A History of the World in Six Glasses*
Ann Vanderhoof, *An Embarrassment of Mangoes*
Additional required readings will be posted on Blackboard

Grades

Research Paper: 25%	Due:
Creative Paper: 25%	Due:
Final Project: 30%	Due:
Travel Journal: 10%	Due following Bahamas travel
Quizzes and Attendance: 10%	Due throughout semester

Course Goals and Expectations

Goals: Food is one of the most important cultural markers, as it is the site where culture meets nature, where the outside and the inside meet. Natural materials are made into cultural artifacts through how they are prepared as the food we eat. The need for food is universal, but cuisine is potently regional. Therefore, the study of food in literature can help us to understand key cultural issues that can be translated into other aspects of our 21st century lives. Historically, French people were called frogs, Germans called Krauts, and Brits called Limeys based on foods generally associated with their nations. Is it true that we are "what we eat"? We will look at the writings of Hemingway, Kincaid, Bourdain, and others as well as the criticism of Bourdieu, Gigante, and Geertz to study representations of this key

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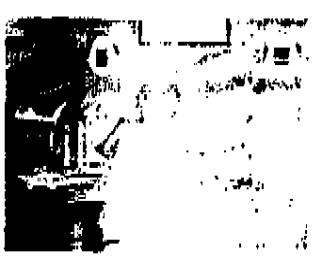
cultural marker and what it can teach us as 21st century cultural critics.
Read: Warning—this is a reading intensive course! I expect you to purchase the required texts immediately, do the readings before coming to class, and always bring the texts being discussed to class with you.
Attend: Attendance is important. Be on time. Attendance and in-class writings often occur at the beginning of the hour, and lateness is disruptive and disrespectful. You are responsible for catching up on anything you might have missed in a manner that does not disrupt class. **Participate:** Bring materials for in-class writings and notes. Be ready to give your opinion, which is important and will be expected. Part of speaking is listening to your classmates carefully and then contributing intelligently, not just making declarations. Be receptive, be critical, and always be respectful.
Write: This is a writing focused class. You will write continuously throughout the semester. Thesis statements, reading assignments, papers, and additional reading assignments will make up the writing requirements of the course. All papers—including the reading assignments—must conform to MLA guidelines: double-spaced, one-inch margins, 12pt font, and a Works Cited page. See Hacker's *A Writer's Reference* for details.
Grading Policy: I grade on a +/- letter scale, S/U when available. If students miss the last week of class because of an emergency, they may petition for an "I." I will determine these on a case-by-case basis.
Late Papers: Weekly reading responses will not be accepted late. Papers turned in late will drop 1/3 of a grade for every day they are late—not only counting class days. After 10 days, late papers will not be accepted for credit.
Plagiarism: Plagiarism—taking credit for another's work—is not allowed. The first instance of intentional plagiarism will lead to an "F" in that assignment. Any further instances of plagiarism will cause the student to be dropped from the class. Don't do it!
In-class behavior: Participation involves respect. Cell phones, Ipods, PDAs, and other electronic devices must be turned off in class. Side conversations are disrespectful and will hurt your participation grade.
Email: Email is definitely the best way to get in touch with me. I try to check my email within 24 hours during the work week.
Other: If you are a student with a disability and would like to discuss special academic accommodations, please contact me during the first week of class.
THE BAHAMAS: This course allows students to join other S&T departments to study abroad in The Bahamas, researching on the island of San Salvador. I encourage students to take advantage of this wonderful opportunity!

Class Schedule

Schedule is tentative and subject to change



1) Class Introduction. Sign-up sheets. Introduce Theme—Caribbean, The Bahamas—Trip in Spring
assignment: read Columbus, De Vaca, De Montaigne

2) Global Food Studies
assignment: read Gigante, Bourdieu, Geertz

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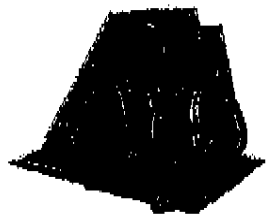
3) Theories of Food in Western History and Culture
assignment: read Mintz, *Sweetness and Power*

4) September 7 Agriculture and Imperialism
assignment: continue Mintz, *Sweetness and Power*

5) What is Food? Beverage? Global Food and Drink
assignment: read Tom Standage, *A History of the World in Six Glasses*

6) Consumption in the U.S.
assignment: continue Tom Standage, *A History of the World in Six Glasses*

7) Caribbean Culture
assignment: read Jamaica Kincaid, *A Little Story*
to discuss: San Salvador—across classes



8) Caribbean Agriculture and Diet
assignment: read Ann Vanderhoof, *An Embarrassment of Mangoes*

9) Regional Diet
assignment: continue Ann Vanderhoof, *An Embarrassment of Mangoes*

10) Food as Tourism
assignment: read Anthony Bourdain, *Gone Bamboo*

11) Consumption: Figurative and Literal Process
assignment: continue Anthony Bourdain, *Gone Bamboo*

12) Caribbean Fishing and Myth-Making
assignment: read Ernest Hemingway, *The Old Man and the Sea*

13) Food Writing and Eco-Criticism
assignment: read selection from Holly Hughes, *The Best Food Writing, 2011*

14) Food Politics and Technology
assignment: read selection from Holly Hughes, *The Best Food Writing, 2011*

15) The "Ugly" Side: Global Food Politics
assignment: student presentations

16) Finals Week: Have a great summer!!!

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Effective Year: ~~2012~~ **Term: Summer** ☐ **Fall** ☒ **Spring** ☒

CC File # ~~8259-2012-MIN-420-0~~

EC File # 2441-Sp2013-Min-401

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

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

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

1. Department: Mining and Nuclear Engineering MIN ENG 401

2. Discipline and Course Number: **Present :** ~~MIN 401~~ **Proposed:** ~~MIN 420~~

3. Course Title: **Present:** **Truck Haulage Engineering and Haul Roads Efficiency**

Proposed:

Abbreviated Course Title: Tr Haulage Engr
(24 Spaces or Less. Only needed for New Courses or Title Changes.)

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

Present: This course will provide understanding into haul road design and safety requirements and equip students with the ability to select, design, implement and supervise truck haulage in surface mines. It will include truck-road-service points; efficiency, productivity and economics; ergonomics and risks.

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: Consent of Instructor

Proposed:

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

9. Justification:

10. Semesters previously offered as an experimental course (101, 201, 301, 401): FS08 (5), FS2011 (0), FS2012 (0)

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: 04/10/12

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 08/26/12

Approved by Curricula Committee: _____ (Chair signature) Date: 10/5/2012

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

Approved as an EC (10/3/2012).

(Revised 1/29/09)