Minutes of the Campus Curricula Committee Meeting
May 8, 2013
12 pm, Room 117 Fulton Hall

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

The following curriculum forms were discussed and approved:

Degree Change Forms:

DC #0472
DC #0474
DC #0475

Course Change Forms:

CC #8464
CC #8466
CC #8467

Experimental Course Forms:

EC #2463
EC #2464
EC #2465
EC #2466
EC #2470 (CC #8465)

The items below were withdrawn by the initiating academic department:

DC #0450, Bachelor of Science in Mechanical Engineering.

DC #0451, Bachelor of Science in Aerospace Engineering

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

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

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

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

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

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

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

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

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

The meeting adjourned at 1:20 pm

Daniel Tauritz, Chair
Missouri S&T Campus Curricula Committee

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Effective Year: 2013 **DC #** 0472-2013-MfgEng-000-00
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:
Master of SCIENCE in Manufacturing Engineering

Department: ~~Manufacturing~~ Mechanical & Aerospace Engineering ~~Program~~

Briefly describe action requested (Attach documentation as appropriate):
For Manufacturing Engineering Master of SCIENCE: **(to Change thesis credits from "6 credit hours" to "6 to 9 credit hours")**

Recommended by Department: _____ Date: Feb 20, 2013
(Chair signature)

Recommended by: _____ Date: 3-11-13
Discipline Specific Curricula Committee (Chair signature)

Approved by Curricula Committee: _____ Date: 5/17/2013
(Chair signature)

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

Modify the requirements for the MS in Manufacturing Engineering by replacing the "current" text on p. 84 of the 2012-2014 Graduate Catalog with the "proposed" text shown below.

Current:

The MS program requires 30 credit hours and a thesis:

- 12 credit hours from the Manufacturing Core Areas
- 6 credit hours of 400 level courses in Manufacturing
- 3 credit hours of approved Mathematics/ Computer Science or any suggested Manufacturing courses
- 6 credit hours for thesis research
- 3 credit hours of graduate courses in Manufacturing

Proposed:

The MS program requires 30 credit hours and a thesis:

- 12 credit hours from the Manufacturing Core Areas
- 6 credit hours of 400 level courses in Manufacturing
- 6 to 9 credit hours for thesis research
- 3 to 6 credit hours of graduate courses in Manufacturing as approved by the academic advisor

DC # 0494-2013-MUCENG-000-00

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

Degree Change Form (DC)

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

Title of degree program, emphasis area, or minor:
Nuclear Engineering (NE) B.S.

Department: **Mining and Nuclear Engineering**

Briefly describe action requested (attach documentation as appropriate):
NE B.S. Program is being modified to provide more flexibility to the students to take substitute courses for C. Sc. 73, 77, 228, Stat 215 and English 160. Also, NE 25 will be waived for transfer students.
Attachments:
1. Current Bachelor of Science, Nuclear Engineering degree requirements, pages 220-222, Undergraduate Catalog 2011-2013.
2. Proposed changes in the degree requirements for B.S. Nuclear Engineering effective Fall 2013.

Recommended by Department: _____ Date: 03/21/13
(Chair signature)

Recommended by DSCC: _____ Date: 4-2-13
(Chair signature)

Approved by Curricula Committee: _____ Date: 5/17/2013
(Chair signature)

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

Undergraduate Catalog 2011- 2013

MISSION STATEMENT

The primary mission of the Nuclear Engineering program is to provide well-educated Nuclear Engineering professionals and leaders to Missouri and the nation in the commercial nuclear industry, national laboratories, graduate schools, and the nation's defense and federal agencies.

Program Educational Objectives

The Educational Objectives of the Nuclear Engineering undergraduate program are:

- Fundamental knowledge of Nuclear Engineering and related technologies. Our graduates will continue to demonstrate a sound fundamental knowledge of nuclear engineering and related technologies as members of their professional community.
- Analytical and problem solving ability. Our graduates will continue to use logical, creative, collaborative, analytical and problem solving abilities to address emerging multidisciplinary endeavors.
- Leadership and professional ethics. Our graduates will continue to demonstrate leadership with an understanding of, and a commitment to, professional ethics.
- Technical communication and interpersonal skills. Our graduates will continue to demonstrate technical communication and interpersonal skills, enabling them to excel in their profession.
- Capability to conduct research. Our graduates will continue to demonstrate the capability to conduct research enabling them to contribute to meeting the needs of their profession.
- Pursuit of life-long learning. Our graduates will continue to demonstrate a recognition of, and a desire for, the pursuit of life long learning that will foster their ability to adapt to change.

Program Outcomes

The following Program Outcomes (a - k) apply to the Nuclear Engineering program.

(a) an ability to apply knowledge of mathematics, science, and engineering.
(b) an ability to design and conduct experiments, as well as to analyze and interpret data.
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
(d) an ability to function on multidisciplinary teams.
(e) an ability to identify, formulate, and solve engineering problems.
(f) an understanding of professional and ethical responsibility.
(g) an ability to communicate effectively.
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
(i) a recognition of the need for, and an ability to engage in life-long learning.
(j) a knowledge of contemporary issues.
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Faculty

Professor:
Arvind Kumar, Ph.D., California-Berkeley, Program Chair, Nuclear Engineering
Associate Professor:
Hyoung Koo Lee, Ph.D., University of California, Berkeley
Gary Mueller[1], Ph.D., UM-Rolla
Shoaib Usman, Ph.D., University of Cincinnati
Assistant Professors:
Ayodeji Alajo, Ph.D., Texas A&M University
Carlos Castano, Ph.D., University of Illinois at Urbana
Adjunct Professors:
Mariesa Crow[1], Ph.D., Illinois; Professor of Electrical & Computer Engineering, UM-Rolla
Delbert Day[1], Ph.D., Pennsylvania State; Curators' Professor Emeritus, UM-Rolla
Tod Moser[1], M.S., UM-Columbia; Manager, Plant Engineering, AmerenUE - Callaway Plant
David A. Summers, Ph.D., Leeds, England; Curators' Professor of Mining Engineering, UM-Rolla
Emeritus Professors:
D. Ray Edwards[1], Sc.D., MIT
Nicholas Tsoulfanidis[1], Ph.D., Illinois

[1] Registered Professional Engineer

Bachelor of Science Nuclear Engineering

Entering freshmen desiring to study Nuclear Engineering will be admitted to the Freshman Engineering Program. They will, however, be permitted, if they wish, to state a Nuclear Engineering preference, which will be used as a consideration for available freshman departmental scholarships. The focus of the Freshman Engineering Program is on enhanced advising and career counseling, with the goal of providing to the student the information necessary to make an informed decision regarding the choice of a major.

For the Bachelor of Science degree in Nuclear Engineering a minimum of 128 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. A student must maintain at least two grade points per credit hour for all courses taken in the student's major department, and an average of at least two grade points per credit hour must be maintained in Nuclear Engineering.

The Nuclear Engineering curriculum contains a required number of hours in humanities and social sciences as specified by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. Each student's program of study must contain a minimum of 16 credit hours of course work

from the humanities and the social sciences areas and should be chosen according to the following rules:

1) All students are required to take one American history course and one economics course. The history course is to be selected from History 112, 175, History 176, or Political Science 90. The economics course may be either Economics 121 or 122. Some disciplines require one humanities course to be selected from the approved lists for art, English, foreign languages, music, philosophy, speech and media studies, or theater.

2) Of the remaining hours, six credit hours must be taken in humanities or social sciences at the 100 level or above and must be selected from the approved lists. One of these courses must have as a prerequisite one of the humanities or social sciences courses already taken. Foreign language courses numbered 70 to 80 can be considered to be one of these courses. (Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 300 level.)

3) Some departments list specific requirements; e.g. a psychology course, a literature course, and /or a second semester of economics. Selections should be made to ensure that these requirements are met.

4) Skill courses are not allowed to meet humanities and social sciences requirements except in foreign languages. Students who select the foreign language option are urged to take more than one course.

5) Special topics, special problems courses and honors seminars are allowed only by petition to and approval by the student's department chair.

The Nuclear Engineering program at Missouri S&T is characterized by its focus on the scientific basics of engineering and its innovative application; indeed, the underlying theme of this educational program is the application of the scientific basics to engineering practice through attention to problems and needs of the public. The necessary interrelations among the various topics, the engineering disciplines, and the other professions as they naturally come together in the solution of real world problems are emphasized as research, analysis, synthesis, and design are presented and discussed through classroom and laboratory instruction.

FRESHMAN YEAR

First Semester	Credit
Freshman Chemistry Requirement[1]	5
Eng 20-Exposition and Argumentation	3
FE 10-Study and Careers in Engineering	1
Math 14-Calculus for Engineers I	4
Nu Eng 25-Nuclear Technology Applications[2]	1
	14
Second Semester	
Elective-Hum or Soc Sci[3]	3
History 112, 175, 176, or Political Science 90	3
Physics 23-Engineering Physics I	4
IDE 20-Intro to Engr Design.	3
Math 15-Calculus for Engineers II	4
	17

SOPHOMORE YEAR

First Semester	Credit
Cmp Sc 73 or 74-Basic Scientific Programming[6]	2
Cmp Sc 77 or 78-Computer Programming Lab[6]	1
CE 50-Statics	3
Math 22-Calculus w/Analytic Geometry III	4
Nu Eng 105-Intro to Nuclear Engineering	2
Physics 24-Engineering Physics II	4
	16
Second Semester	
Cmp Sc 228-Intro to Numerical Methods	3
Econ 121 or 122-Micro/Macroeconomics	3
Nu Eng 206-Reactor Operations I	1
CE 110-Mechanics of Materials	3
Math 204-Elem Diff Equations	3
Nu Eng 203-Interactions of Radiation w/Matter or Physics 107-Intro to Modern Physics	3
	16

JUNIOR YEAR

First Semester	Credit
Elective-Hum or Soc Sci[3]	3
Stat 215-Engineering Statistics	3
Mt Eng 121-Metallurgy for Engineers	3
Nu Eng 205-Fundamentals of Nuclear Engineering	3
Nu Eng 221-Reactor Fluid Mechanics	3
	15
Second Semester	
English 160-Technical Writing	3
Nu Eng 312-Nuc Radiation Measurement & Spectro	3
Nu Eng 223-Reactor Heat Transfer	3
Nu Eng 303-Reactor Physics I	3
Nu Eng 319-Nuclear Power Plant Systems	3
Technical Electives-200 or 300 level[5]	3
	18

SENIOR YEAR

First Semester	Credit
Elective-Hum or Soc Sc[3]	3
Nu Eng 304-Reactor Lab I	2
Nu Eng 307-Nuclear Fuel Cycle	3
Elective-300 level Math	3
Nu Eng 322-Nuclear System Design I	1
Nu Eng 341-Nuclear Materials I	3
	15
Second Semester	
Elective-Hum or Soc Sci[3]	3
Technical Elective-300 level[5]	3
Free Elective[4]	6
Nu Eng 308-Reactor Lab II	2
Nu Eng 323-Nuclear System Design II	3
	17

NOTE: Minimum credit hours for graduation is 128.

1) Chemistry 1 and 2 or Chemistry 5 and Chemistry 4 or an equivalent training program approved by Missouri S&T.
2) Nuclear Engineering students are expected to take Nuclear Technology Applications (Nu Eng 25) during their freshman year.
3) Humanities and Social Science to be taken in accordance with the policy described above.
4) Courses which do not count towards this requirement are remedial courses such as algebra

and trigonometry, physical education courses, extra credits in required courses, and basic Air Force and Army ROTC courses (courses taught in the first two years of the ROTC program).

[5] Any Math, Science, or Engineering courses.

[6] Students may take CS 53 in place of CS 73 or 74 and CS 54 in place of CS 74 or 78.

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

Nuclear Engineering Minor Curriculum

Nuclear power plants and other nuclear installations employ not only nuclear but also civil, mechanical, electrical, and chemical engineers. A Nuclear Engineering minor, therefore, enhances the academic credentials of a student and broadens his/her employment choices. A minimum of 15 hours is required for a minor in Nuclear Engineering.

Before the courses listed below can be taken, the student should have completed Elementary Differential Equations (Math 204 or equivalent) and Atomic and Nuclear Physics (Physics 107 or Nu Eng 203 or equivalent). Required courses are:

- Nu Eng 204-Nuc Radiation Measurements (3 hrs)
- Nu Eng 205-Fundamentals of Nu Eng (3 hrs)
- Nu Eng 223-Reactor Heat Transfer (3 hrs)

The other 6 hours should be selected from nuclear engineering 300-level courses.

Nuclear Engineering Courses

25 **Nuclear Technology Applications** (LEC 1.0) It is a project oriented course that examines various aspects of nuclear technology, such as radiation detection, radiation protection, food irradiation, medical and industrial applications. The students will work in small groups on stimulating projects.

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.

105 **Introduction To Nuclear Engineering** (LEC 2.0) Atoms and nuclei; nuclear reactions; radioactivity, interactions of radiation with matter; fission and fusion reactors; nuclear fuels; radiation effects on materials and man; radioactive waste disposal; reactor safety; radiation protection. Prerequisite: Math 15 or Math 21.

200 **Special Problems** (IND 0.0-6.0) Problems or readings on 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.

203 **Interactions Of Radiation With Matter** (LEC 3.0) Atoms and nuclei; relativistic kinematics; quantum theory; nuclear decay; cross sections; neutron, gamma, and charged particle interactions; production of radioisotopes; electrical, thermal and magnetic properties of solids. Prerequisites: Math 22, Physics 24.

205 **Fundamentals Of Nuclear Engineering** (LEC 3.0) An introduction to the principles and equations used in nuclear fission reactor technology, including reactor types; neutron physics and reactor theory; reactor kinetics and control; radiation protection; reactor safety and licensing; and environmental aspects of nuclear power. Prerequisite: Physics 107 or Nu Eng 203; Math 204.

206 **Reactor Operations I** (LAB 1.0) A first course in reactor operations training and practical approach to nuclear reactor concepts. Students will receive hands-on training and are encouraged to take the NRC Reactor Operator's Exam. Prerequisites: Math 14 or Math 8; preceded or accompanied by Nu Eng 25.

221 **Reactor Fluid Mechanics** (LEC 3.0) A study of the fundamental principles of incompressible viscous and inviscid flows in ducts, nozzles, tube bundles and applications to nuclear engineering; fluid statics; dimensional analysis and similitude; boundary layer theory. Prerequisites: Math 204, Junior standing.

223 **Reactor Heat Transfer** (LEC 3.0) A study of the fundamental principles of conduction, convection and thermal radiation with volumetric source terms for nuclear engineering applications; empirical correlations; finite difference methods; analysis of nuclear reactor cores. Prerequisite: Nu Eng 221.

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.

303 **Reactor Physics I** (LEC 3.0) Study of neutron interactions, fission, chain reactions, neutron diffusion and neutron slowing down; criticality of a bare thermal homogeneous reactor. Prerequisite: Nu Eng 205.

304 **Reactor Laboratory I** (LEC 1.0 and LAB 1.0) Acquaints the student with neutron flux measurement, reactor operation, control rod calibration, reactor power measurement and neutron activation experiments. Experiments with the thermal column and neutron beam port are also demonstrated. Prerequisites: Nu Eng 204, 205.

306 **Reactor Operation II** (LAB 1.0) The operation of the training reactor. The program is similar to that required for the NRC Reactor Operator's

Undergraduate Catalog 2011 - 2013

(Proposed) Nuclear Engineering Curriculum – FS 2013

Bachelor of Science
Nuclear Engineering

FRESHMAN YEAR

First Semester Credit

Freshman Chemistry Requirement (1)	5
Eng 20-Exposition and Argumentation	3
FE 10-Study and Careers in Engineering	1
Math 14-Calculus for Engineers I	4
Nu Eng 25-Nuclear Technology Applications (2)	1
	14

Second Semester

Elective-Hum or Soc Sci (3)	3
History 112, 175, 176, or Political Science 90	3
Physics 23-Engineering Physics I	4
IDE 20-Eng Design w/Computer App	3
Math 15-Calculus for Engineers II	4
	17

SOPHOMORE YEAR

First Semester Credit

~~Cmp Sc 53/73/74-Basic~~ Programming (6) elective	~~2~~ 3
~~Cmp Sc 54/77/78-Computer Programming Lab~~	~~1~~
IDE 50-Eng Mech-Statics	3
Math 22-Calculus w/Analytic Geometry III	4
Nu Eng 105-Intro to Nuclear Engineering	2
Physics 24-Engineering Physics II	4
	16

Second Semester

Cmp Sc 228-Intro to Numerical Methods	
Or any 200 level Math or 300 Level Statistics	3
Econ 121 Or 122-Micro/Macroeconomicas	3
Nu Eng 206-Reactor Operations I	1
IDE 110-Mechanics of Materials	3
Math 204-Elem Diff Equations	3
Physics 107-Intro to Modern Physics	3
	16

JUNIOR YEAR

First Semester Credit

Elective-Hum or Soc Sci (3)	3
Stat 211/213/215/217-Statistics	3
Mt Eng 121-Metallurgy for Engineers	3
Nu Eng 205-Fundamentals of Nuclear Engineering	3
Nu Eng 221-Reactor Fluid Mechanics	3
	15

Second Semester

English 60/160-Technical Writing	3
Nu Eng 312-Nuc Radiation Measurement & Spectro	3
Nu Eng 223-Reactor Heat Transfer	3
Nu Eng 303-Reactor Physics I	3
Nu Eng 319-Nuclear Power Plant Systems	3
Technical Electives – 200 or 300 level (5)	3
	18

SENIOR YEAR

First Semester Credit

Elective-Hum or Soc Sci (3)	3
Nu Eng 304-Reactor Lab I	2
Nu Eng 307-Nuclear Fuel Cycle	3
Elective-300 level Math	3
Nu Eng 322-Nuclear System Design I	1
Nu Eng 341-Nuclear Materials I	3
	15

Second Semester

Elective-Hum or Soc Sci (3)	3
Technical Elective-300 level (5)	3
Free Elective (4)	6
Nu Eng 308-Reactor Lab II	2
Nu Eng 323-Nuclear System Design II	3
	17

Minimum credit hours for graduation is 128.

1) Chemistry 1 and 2 or Chemistry 5 and Chemistry 4 or an equivalent training program approved by Missouri S&T.
2) Nuclear Engineering students are expected to take Nuclear Technology Applications (Nu Eng 25) during their Freshman year. However transfer students are exempt.
3) Humanities and Social Science to be taken in accordance with the ~~School of Materials, Energy, and Earth Resources~~ policy described above.
4) Courses which do not count towards this requirement are remedial courses such as algebra and trigonometry, physical education courses, extra credits in required courses, and basic Air Force and Army ROTC courses (courses taught in the first two years of the ROTC program).
5) Any Math, Science, or Engineering courses.

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

6) The programming elective consists of a lecture and lab combination, and may be selected from COMP SCI 73 and COMP SCI 77, or COMP SCI 74 and COMP SCI 78, or COMP SCI 53 and COMP SCI 54. Note that COMP SCI 53 and COMP SCI 54 requires one more credit hour than the other options.

DC # 0475-2013-Aero Eng-000-00

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

Degree Change Form (DC)

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

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

Department: **Mechanical & Aerospace Engineering**

Briefly describe action requested (attach documentation as appropriate):
Revise degree requirements as in the attachment

Recommended by Department: _____ Date: 4/9/2013
(Chair signature)

Recommended by DSCC: _____ Date: 4/18/13
(Chair signature)

Approved by Curricula Committee: Daniel Fontijn Date: 5/17/2013
(Chair signature)

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

AE Catalog Revision: Summary of Changes
April 2013

1. Changes footnotes (highlighted in yellow)
2. Combined footnotes 4 and 5 into footnote 4
3. Added AE 330 and Stat 213 and 215 to Advanced Math/Comp Sc list
4. Added footnote for 300-level tech elective exception for Ae Eng 377 and Ae Eng 3xx (Asteroid Mining)
5. Reduced number of free electives to 2
6. Added bio ethics to the type of allowable ethics courses
7. Added requirement for passing assessment exam

BSAE Catalog Revision (April 2013)

FRESHMAN YEAR

First Semester	Credit
Freshman Engineering 10	1
Chemistry 1,2,4,[1]	6
English 20	3
Math 14[4]	4
H/SS History elective[2]	3
	17

Second Semester	
IDE 20	3
Math 15[4]	4
Physics 23[4]	4
H/SS Economics elective[3]	3
	14

SOPHOMORE YEAR

First Semester	Credit
Cmp Sc 73 or 74-Basic Sci Prog[10]	2
Cmp Sc 77 or 78-Comp Prog Lab[10]	1
CE 50 ~~or 51~~-Statics[4]	3
Math 22-Calc/Analy Geom III[4]	4
Physics 24-Eng Physics II[4]	4
Ae Eng 161-Aero Vehicle Performance[4]	3
	17

Second Semester	
Ae Eng 180-Intro to Aerospace Design	2
Ae Eng 160-Eng Mech-Dyn[4]	3
Mc Eng 219-Thermodynamics[4]	3
Math 204-Elem Diff Equations[4]	3
CE 110-Mech of Materials[4]	3
Elective/Literature	3
	17

JUNIOR YEAR

First Semester	Credit
Ae Eng 213-Aerospace Mech I[4]	3
Ae Eng 231-Aerodynamics I[4]	3
Ae Eng 377-Princ of Eng Materials	3
El Eng 281-Electrical Circuits	3
Electives-Advanced Math/Cmp Sc[5]	3
	15

Second Semester	
Ae Eng 251-Aerospace Structures I[4]	3
Ae Eng 261-Flight Dynamics and Control	3
Ae Eng 271-Aerodynamics II	3
Ae Eng 282-Exp Methods in Ae Eng I	2
Elective/Ethics[11]	3
Elective/Communications[7]	3
	17

SENIOR YEAR

First Semester	Credit
Ae Eng 235-Aircraft & Space Vehicle Propulsion	3
Ae Eng 253-Aerospace Structures II	3
Ae Eng 280 or 380-Aero Sys Design I	2
Ae Eng 283-Experimental Methods in Ae Eng II	2
Electives-Technical[7]	3
Elective upper level /Hum/Soc Sci[8]	3
	16

Second Semester	
Ae Eng 281 or 382-Aero Sys Design II	3
Electives-Technical[6]	3
Electives-Technical[6]	3
Aero Eng 285 - Assessment	1
Electives Free[9]	2
Electives-Hum/Soc Sci	3
	15

List of Notes:

1) Chem 1, 2 and 4 or an equivalent training program approved by Missouri S&T
2) Must be one of the following: Political Science 90, History 112, History 175, or History 176.
3) Must be one of the following: Economics 121 or Economics 122.
4) A grade of "C" or better in Chem 1, Math 14, 15, 22, 204, Physics 23, 24, Civ Eng 50, 110, Computer programming elective, Ae Eng 161, Mc Eng 219, and Ae Eng 160, both as prerequisite for follow-up courses in the curriculum and for graduation.
5) Must be one of the following: AE 330, Comp Sc 228, Math 203, Math 208, Stat 213, Stat 215, or any 300-level math or computer science course approved by the student's advisor.
6) Electives must be approved by the student's advisor. Nine hours of technical electives must be in Mechanical and Aerospace Engineering. Three hours of departmental technical electives must be at the 300-level. Ae Eng 377 and the 300-level Asteroid Mining course co-listed with Geological Engineering are not to be used for 300-level tech elective.
7) This course can be selected from English 60, 160, SP&MS 85, or the complete four-course sequence in Advanced ROTC (Mil Sc 105, 106, 207, and 208 or Aerospace Studies 350, 351, 380, and 381).
8) Choose 100- or higher-level course from the approved list. One of the other courses taken in humanities/social science should be a prerequisite for this course.
9) Each student is required to take two hours or more of free electives in consultation with his/her academic advisor. Credits which do not count towards this requirement are deficiency courses (such as algebra and trigonometry), and extra credits in required courses.
10) Computer Science requirement can be satisfied by taking CS 53 and CS 54.
11) Must be a course in engineering ethics, business ethics, bio ethics, social ethics, or any ethics course approved by the student's advisor.

NOTE: All Aerospace Engineering students must take and pass the Aerospace Engineering Assessment Exam prior to graduation.

Current (April 2013) Online BSAE Catalog Description

FRESHMAN YEAR

First Semester Credit

Freshman Engineering 10 1
Chemistry 1,2,4[1,4] 6
English 20 3
Math 14[4] 4
H/SS History elective[2] 3
17

Second Semester

IDE 20 3
Math 15[4] 4
Physics 23[4] 4
H/SS Economics elective[3] 3
14

SOPHOMORE YEAR

First Semester Credit

Cmp Sc 73 or 74-Basic Sci Prog[11] 2
Cmp Sc 77 or 78-Comp Prog Lab[11] 1
CE 50 or 51-Statics[4] 3
Math 22-Calc/Analy Geom III[4] 4
Physics 24-Eng Physics II[4] 4
Ae Eng 161-Aero Vehicle Performance 3
17

foot note

Second Semester

Ae Eng 180-Intro to Aerospace Design 2
Ae Eng 160-Eng Mech-Dyn[5] 3
Mc Eng 219-Thermodynamics[4,5] 3
Math 204-Elem Diff Equations[4] 3
CE 110-Mech of Materials[4] 3
Elective/Literature 3
17

JUNIOR YEAR

First Semester Credit

Ae Eng 213-Aerospace Mech I[4] 3
Ae Eng 231-Aerodynamics I[4,5] 3
Ae Eng 377-Princ of Eng Materials 3
El Eng 281-Electrical Circuits 3
Electives-Advanced Math/Cmp Sc[6] 3
15

Added AE330 and Stat 213, 215

Second Semester

Ae Eng 251-Aerospace Structures I[4] 3
Ae Eng 261-Flight Dynamics and Control 3
Ae Eng 271-Aerodynamics II 3
Ae Eng 282-Exp Methods in Ae Eng I 2
Elective/Ethics[12] 3
Elective/Communications[8] 3
17

Added Bio Ethics

SENIOR YEAR

First Semester Credit

Ae Eng 235-Aircraft & Space Vehicle Propulsion 3
Ae Eng 253-Aerospace Structures II 3
Ae Eng 280 or 380-Aero Sys Design I 2
Ae Eng 283-Experimental Methods in Ae Eng II 2
Electives-Technical[7] 3
Electives/Hum/Soc Sci[9] 3
16

Second Semester

Ae Eng 281 or 382-Aero Sys Design II	3
Electives-Technical[7]	3
Electives-Technical[7]	3
Electives Free[10]	3
Electives-Hum/Soc Sci[9]	3
	15

List of Notes:

[1] Chemistry 1 ,2 and 4 or an equivalent training program approved by Missouri S&T

[2] Must be one of the following: Political Science 90, History 112, History 175, or History 176.

[3] Must be one of the following: Economics 121 or Economics 122.

[4] A grade of "C" or better in Chem 1, Math 14, 15, 22, 204, Physics 23, 24 CE 50, 110 and Computer programming is required both for enrollment in ME 219, AE 213, AE 231, or AE 251 and for graduation.

[5] A grade of "C" or better in AE Eng 160 and ME 219 is required both for enrollment in any courses which require either AE Eng 160 or ME 219 as prerequisites and for graduation.

[6] Must be one of the following: Comp Sc 228, Math 203, Math 208, or any 300-level math or computer science course approved by the student's advisor.

[7] Electives must be approved by the student's advisor. Nine hours of technical electives must be in Mechanical and Aerospace Engineering. Three hours of departmental technical electives must be at the 300-level. Honors students have special requirements for technical electives.

[8] This course can be selected from English 60, 160, SP&MS 85, or the complete four-course sequence in Advanced ROTC (Mil Sc 105, 106, 207, and 208 or Aerospace Studies 350, 351, 380, and 381).

[9] All electives must be approved by the student's advisor. Students must comply with the requirements specified in the current catalog.

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

[11] Computer Science requirement can be satisfied by taking CS 53 and CS 54.

[12] Must be a course on engineering ethics, business ethics, social ethics, or any ethics course approved by the student's advisor.

NOTE: All Aerospace Engineering students must take the departmental Exit Exam prior to graduation.

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

CC File # 8464-2013-ECON-400-10

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:** Economics
2. **Discipline and Course Number:** **Present :** **Proposed:** ECON 400
3. **Course Title:** **Present:**
   Proposed: Special Problems
   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: Problems or readings on specific subjects or projects in the department. Consent of instructor 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:

8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:** Additional graduate courses have been developed in the department and this would provide an avenue for additional graduate-level inquiry.

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: 2/28/13

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 3/21/13

Approved by Curricula Committee: _____ (Chair signature) Date: 5/17/2013

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

(Revised 1/29/09)

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

CC File # 5466-2013-Econ-443-10

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: Economics

2. Discipline and Course Number: **Present :** **Proposed:** Econ 443

3. Course Title: **Present:**

Proposed: Creativity, Innovation, and Sustainability

Abbreviated Course Title: ~~Creat Innov Sustain~~ Creativity Innovation
(24 Spaces or Less. Only needed for New Courses or Title Changes.)

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

Present:

Proposed: This interdisciplinary course examines the use of innovation as a competitive technological strategy with a sustainability perspective. It explores ways in which individuals, groups, and organizations can become more creative and how leadership and a culture of change can be implemented.

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: Graduate standing.

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

9. Justification: Taught as BUS 401-Business Innovation, Sp 12; BUS 401-Innovation Management, Sp 13.

10. Semesters previously offered as an experimental course (101, 201, 301, 401): Sp 12, Sp 13

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: 3/13/13

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 4/8/13

Approved by Curricula Committee: _____ (Chair signature) Date: 5/17/2013

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

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

CC File # 8467-2013-EXP ENG-360-10

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: Mining & Nuclear Engineering

2. Discipline and Course Number: **Present :** **Proposed:** ExpEng 360

3. Course Title: **Present:**

Proposed: Display Fireworks Manufacturing

Abbreviated Course Title: Fireworks Manufacturing
(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description *(40 Words or Less)*

Present:

Proposed: 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 canister shells and other pyrotechnic effects.

5. If course requires field trip check box: ☐

6. Credit Hours:	**Present:**	**Lecture:**	**Lab:**	**Total:**
	Proposed:	**Lecture: 1**	**Lab: 2**	**Total:** 3

7. Prerequisites:

Present:

Proposed: Chem 1, Chem2, Chem 4; one of Econ 121 , Econ 122, ~~Emgt~~ Eng Mgt 137; Successful background check.

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

9. Justification: Application after 2 succesful offerings to obtain permanent number. This class is an important offering for the minor and an additional class for the masters in explosives engineeirng. The Federal ATF also have considerable interest in a blended learning offering for their agents taking the explosives technology grad certificate. 13 16

10. Semesters previously offered as an experimental course (101, 201, 301, 401): Exp 301 FS2012, SP2013

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) DR. WORSEY FOR DR. FRIMPONG Date: 26 March 2013

Recommended by Discipline Specific Curricula Committee Stephen Kapp (Chair signature) Date: 4/2/2013

Approved by Curricula Committee: David Finke (Chair signature) Date: 5/17/2013

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

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

EC File # 2463 - Fall 2013 - CIV ENG - 401

Experimental Course Form (EC)

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

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

An EC form must be submitted each semester it is to be offered, not to exceed two offerings. An experimental course that is required should be submitted on a CC form. *Co-listed offerings should be submitted on one form, originating from the primary discipline*.

Department: Civil, Architectural, and Environmental Engineering

Discipline and Course Number: CE/ArchE401

Course Title: Structural Health Monitoring

Abbreviated Title *(24 spaces or less)*: Struct Health Monitoring

Instructor(s): Genda Chen

Credit Hours: **Lecture:** 3.0 **Lab:** 0 **Total:** 3

Prerequisites: ~~CE~~/ArchE384 or equivalent
Civ Eng / Arch Eng

Semester(s) previously taught:

Brief Course Description: (40 words or less)
This course discusses the state-of-the-art development and implementation of structural health monitoring technologies, sensor designs, data analyses, and comprehensive applications in structural engineering. Emphasis is placed on the integration of various disciplines-specific technologies into a general framework of structural monitoring. Both experimental and numerical simulations are expected throughout the course work.

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

1) ~~ArchE401~~ Arch Eng 401 **2)** ~~CE401~~ Civ Eng 401 **3)**

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

Department Chair: _____ Date: 3/28/13
(Chair Signature)

Discipline Specific Curricula Committee: _____ Date: 4-8-13
(Chair signature)

Curricula Committee: _____ Date: 5/17/2013
(Chair Signature)

Arch E/CE401 STRUCTURAL HEALTH MONITORING
Fall Semester 2013

Instructor: Genda Chen, Room 328 in Butler-Carlton Hall

Catalog Description: Structural health monitoring overview and process; damage mechanisms of structural materials and systems; sensors, conditioning and metrology; adaptive data analysis; data transmission; feature extraction and discrimination; system identification and damage detection; case studies.

Prerequisites: CE/Arch 584 (Structural Dynamics) or equivalent.

Class Schedule: Tuesday and Thursday 3:00 – 4:15 p.m. in CE316

Office Hours: 1:00 – 3:00 p.m. and 4:30 – 6:00 p.m. Tuesday and Thursday

Textbook: Structural Health Monitoring.

Grading:

Quizzes (2)	50%	(see Quizzes below)
Homework	25%	(see Team Homework below)
Final Take-home Project	25%	

Quizzes: Two quizzes will be given on March 14 and April 27, respectively. No make-up quizzes will be given. Approval from instructor must be obtained in advance if a quiz has to be missed for a valid reason.

Team Homework: Assigned problems will be worked in pencil on 8 ½ x 11 in. engineering paper on one side of the sheet, with each problem starting on a new page or one inch spacing between problems. The presentation will include a statement of the problem, a neat sketch (optional), and an orderly presentation of the solution. Assigned problems will be collected.

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

Objectives: This course is intended to provide graduate students with an opportunity to have a general understanding of the state-of-the-art development and implementation of structural health monitoring technologies, and an in-depth study on several specific technologies in terms of sensor design, data analysis, data transmission, and comprehensive application in transportation infrastructure. Emphasis will be placed on the integration of various discipline-specific technologies into a general framework of structural health monitoring. Both experimental and numerical simulations are expected throughout the course work.

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

1. Describe and apply the concept and process of structural health monitoring.

2. Describe various damage mechanisms of structural materials and systems.
3. Describe and apply the design methodology and operation principle of at least two types of sensors.
4. Describe and apply at least two types of data analysis methods such as non-adaptive vs. adaptive time-frequency analysis.
5. Describe and apply at least one feature extraction and discrimination technique.
6. Design and deploy a structural health monitoring system in transportation structures.

Final Take-home Project: Design a structural health monitoring system for a structural member, component, or system.

Remarks: Student and guest presentations are expected on selected topics.

Tentative Lecture Topics:

Lecture 1: Introduction to Structural Health Monitoring (concept, process, classification – construction/operation/diagnostic monitoring, and damage mechanisms of materials and structural systems)

Part I: Operation and Environment

Lecture 2: Noise Characteristics – Stochastic Representation

Lecture 3: Operational Loading – Traffic Modeling

Part II: Sensing, Conditioning, Acquisition, and Communication

Lecture 4: Point Sensors (LVDT, Tiltmeter, Accelerometer, Strain Gauge, Thermometer, Pressure Transducer, Electromagnetic Sensor)

Lecture 5: Distributed Sensors (Coax Cable and Optical Fiber Sensors)

Lecture 6: Metrology in Various Applications

Lecture 7: Wired and Wireless Data Transmission

Part III: Feature Extraction and Discrimination

Lecture 8: Stationary and Non-stationary Signals

Lecture 9: Fourier and Hilbert Transforms and Their Applications

Lecture 10: Wavelet Analysis and Applications

Lecture 11: Adaptive Empirical Mode Decomposition and Hilbert-Huang Transform

Lecture 12: Adaptive Analytical Mode Decomposition or Adaptive Filter

Lecture 13: Adaptive Wavelet Analysis

Lecture 14: Supervised and Unsupervised Extraction

Lecture 15: Support Vector Machine

Lecture 16: Dynamic Characteristics or Neural Network Approach or Image Processing

Lecture 17: System Identification and Damage Detection (Least-square Method, Subspace Iterative Method, Random Decrement, Eigen Realization Algorithm, ARMA model)

Part IV: Classification of Structural Condition

Lecture 18: Statistical Model for Classification

Lecture 19: Case Study – Real-time Bill Emerson Cable-stayed Bridge Monitoring System and/or Monitoring of a Geomechanic System

EC # 2464-5513-MINENG-401

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

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

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

Department: **Mining and Nuclear Engineering**

Discipline and Course Number: **MI Eng 401**

Course Title: **Contract Management**

Abbreviated Title (24 spaces or less): **Contract Mgt**

Instructor(s): **Dr. Tad S. Golosinski**

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

Prerequisites: **Consent of Instructor**

Semester(s) previously taught:

Brief Course Description (360 character spaces or less): Topics include: **Contracting in mining/ policies/ types of contracts/ bid preparation and evaluation/negotiations; Contract risks, contract administration; Earthmoving and excavation contracts; Mining / maintenance contracts and partnerships / alliancing.**

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

1) **3)** **5)**

2) **4)** **6)**

Recommended by Department: DR. WORSEY FOR DR. PRIMPONG (Chair signature) Date: 19 March 2013

Recommended by DSCC: (Chair signature) Date: 21 March 2013

Approved by Curricula Committee: (Chair signature) Date: 5/17/2013

EC # 2965-SS2013 -MINENG-401

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

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

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

Department: **Mining and Nuclear Engineering**

Discipline and Course Number: **MI Eng 401**

Course Title: **Belt Conveying in Mines**

Abbreviated Title (24 spaces or less): **Belt Conveying**

Instructor(s): **Dr. Tad S. Golosinski**

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

Prerequisites: **Consent of Instructor**

Semester(s) previously taught: **SS2006**

Brief Course Description (360 character spaces or less): Topics include: **Intro:belt conveyor components,** est **of required conveyor drive power/conveying rate. Friction drives/belt tensions,** c **onveyor take-ups,** Conveyor **Coveyor drives,** ~~Other~~ **conveyor** components: ~~componets~~ **idlers transfer point,** ~~other~~ s **election of a belt** conveyor ~~convey~~ **for specific mining application.** and applications, **Conveyor operations/maintenance/troubleshooting.Steep angle conveyor: types, properties, tube pipe.**

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

1) **3)** **5)**

2) **4)** **6)**

Recommended by Department: DR. WORSEY FOR DR. FRANKOVSKY Date: 19 March 2013.
(Chair signature)

Recommended by DSCC: Date: 21 Mar 2013
(Chair signature)

Approved by Curricula Committee: Daniel Jarvis Date: 5/14/2013
(Chair signature)

EC # 2466-SS2013-Geophys-401

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

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

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

Department: **GSE**

Discipline and Course Number: **Geophys 401**

Course Title: **Advanced Geophysical Field Methods**

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

Instructor(s): **Anderson**

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

Prerequisites: **Instructor Approval**

Semester(s) previously taught: **None**

Brief Course Description (360 character spaces or less): **Geophysical field data will be acquired by registrants at selected study sites with the objective of imaging the shallow subsurface and built structures. Registrants will process and interpret the acquired geophysical data using commerial state-of-the art geophysical processing and interpretational software.**

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

1) GE 401 **3)** **5)**

2) **4)** **6)**

Recommended by Department: Ralph Stone (Chair signature) Date: 4-5-13

Recommended by DSCC: Thomas Rapp Daniel Smith (Chair signature) Date: 4-8-13

Approved by Curricula Committee: Daniel Smith (Chair signature) Date: 5/17/2013

EC File #2470-FS 2013-Art 201
CC File #~~8465-2013-ART-251-33~~

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:** ALP
2. **Discipline and Course Number:** **Present :** ~~Art 251~~ **Proposed:** Art ~~251~~ 201
3. **Course Title:** **Present:** ~~**Art 251: Genre Studies in Film and Literature**~~
   Proposed: ~~**Art 251:**~~ **A Study of Documentary**

   Abbreviated Course Title: Study of Documentary
   (24 Spaces or Less. Only needed for New Courses or Title Changes.)
4. **Catalog Description** *(300 Character Spaces or Less.)*

   Present: ~~Topics examine various generic relationships between film and literature (e.g., comedy, Film Noir, western literature/film)~~

   Proposed: An exploration of the art, truth, and controversy of the documentary from 1895 to the present, featuring landmark films seen through contemporary and historical perspectives: actualities, city symphonies, war documentaries, concert films, personal documentaries, and mockumentaries.
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: ~~Art 85~~

   Proposed: Art 85
8. **Required for Majors:** ☐ **Elective for Majors:** ☒
9. **Justification:**

10. **Semesters previously offered as an experimental course (101, 201, 301, 401):**
11. **List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.**

1) **2)** **3)**

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

Recommended by Department _____ (Chair signature) Date: 3/6/2013

Recommended by Discipline Specific Curricula Committee _____ (Chair signature) Date: 3/6/2013

Approved by Curricula Committee: _____ (Chair signature) Date: 5/17/2013

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