UNIVERSITY FACULTY SENATE FORMS

Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: ___Michael Keefe_____phone number___302-831-8009_____

Department: __Mechanical Engineering_____email address___keefe@udel.edu___

Date: _____November 3, 2011_____

Action: _____modify bachelor of Mechanical Engineering Degree program_____
(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term_____13F_____
(use format 04F, 05W)

Current degree____BME_____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: _____BME_____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name:_____(not applicable - same name)_____
Proposed new name for revised or new major / minor / concentration / academic unit (if applicable)

Revising or Deleting:

Undergraduate major / Concentration:____Mechanical Engineering
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor:_____
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change:_____
(**Must attach** your Graduate Program Policy Statement)

Graduate Program of Study:_____
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration:_____

Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.

List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?

MEEG402,Senior Design - FSAE; this course has been offered the previous two years as an experimental (MEEG467) course, and is in the system to be given a permanent number. It has the same academic syllabus as our existing MEEG401, Senior Design, course (which also counts as a Discovery-Learning Experience). The difference is that the students' design experience is not focused upon an industrial-based engineering problem but rather on an international student-competition engineering problem.

Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: http://www.ugs.udel.edu/gened/

Only change to curriculum is to allow a student-competition based senior capstone design experience in addition to the existing industrial-based senior capstone design experience. Therefore, identical to current curriculum (the MEEG401, Senior Design) as concerns the capstone and goals of undergraduate education.

Identify other units affected by the proposed changes:
(Attach permission from the affected units. If no other unit is affected, enter "None")

None

Describe the rationale for the proposed program change(s):
(Explain your reasons for creating, revising, or deleting the curriculum or program.)

An existing University of Delaware student organization, Society of Automotive Engineers (SAE), has been actively participating in an international annual competition called Formula SAE since ~1996. A number of years ago, the students asked about the possibility of combining our required design experience with their competition focus. Many accredited mechanical engineering programs already use a competition (including this Formula SAE competition) as their senior capstone experience. The design faculty of the Mechanical Engineering Department modified the SAE needs to fit the structure and academic focus of our senior capstone experience. We worked with an experimental course over the past two academic years and there is enough sustainable interest to continue this as a formal part of our program.

Program Requirements:
(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.)

Catalog information: strike out shows changes - new text added in GREEN:

DEGREE: BACHELOR OF MECHANICAL ENGINEERING
MAJOR: MECHANICAL ENGINEERING

CURRICULUM		**CREDITS**
Parenthesized figures indicate year and semester in which the course should be taken (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior) and semester (F = fall, S = spring)		
UNIVERSITY REQUIREMENTS		
ENGL 110	Critical Reading and Writing (minimum grade C-)	3 (1F)
First Year Experience (FYE)		0-4
Discovery Learning Experience (DLE)		3
Breadth Requirements		12
Multi-cultural Course(s)		3
MAJOR REQUIREMENTS		
College of Engineering Breadth Requirements		21

The College of Engineering requires 21 total Breadth Requirement credits (essentially 9 credits in addition to the University Breadth Requirement.)

- If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.
- Of the 21 credits, 6 credits must be at the Upper Level (usually 300-level or higher) as designated on the College of Engineering Breadth Requirement list.
- Of the 21 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion.)
- All Breadth Requirement coursework must be passed with a minimum grade of C-.

CHEM 103	General Chemistry	4 (1F)
CISC 106	General Computer Science for Engineers	3 (1F)
EGGG 101	Introduction to Engineering (FYE)	2 (1F)
MATH 241	Analytic Geometry and Calculus A	4 (1F)
MATH 242	Analytic Geometry and Calculus B	4 (1S)
MATH 243	Analytic Geometry and Calculus C	4 (2F)
MATH 351	Engineering Mathematics I	3 (2F)
MATH 352	Engineering Mathematics II	3 (2S)
MATH 353	Engineering Mathematics III	3 (2S)
MEEG 112	Statics (minimum grade of C- required to progress)	3 (1S)
MEEG 202	Computer-Aided Engineering Design	3 (2S)
MEEG 211	Dynamics	3 (2F)
MEEG 215	Mechanics of Solids	3 (2F)
MEEG 216	Mechanics of Solids Lab	1 (2F)
MEEG 301	Machine Design - Kinematics and Kinetics	3 (3F)
MEEG 304	Machine Design - Elements	3 (3S)
MEEG 311	Vibration and Control	3 (3F)
MEEG 312	Vibration and Control Lab	1 (3F)
MEEG 321	Materials Engineering	3 (3F)
MEEG 331	Fluid Mechanics I	3 (3F)
MEEG 332	Fluid Mechanics II	3 (3S)
MEEG 333	Fluid Mechanics Lab	1 (3F)
MEEG 341	Thermodynamics	3 (3F)
MEEG 342	Heat Transfer	3 (3S)
MEEG 346	Thermal Lab	1 (3S)
MEEG 401 or 402	Senior Design or Senior Design - FSAE (DLE)	6 (4F)
MSEG 302	Materials Science for Engineers	3 (2S)
PHYS 207	Fundamentals of Physics I	4 (1S)
PHYS 245	Introduction to Electricity and Electronics	4 (2S)

TECHNICAL ELECTIVES 15

Courses in engineering, science or mathematics selected by the student with the approval of his/her advisor.

CREDITS TO TOTAL A MINIMUM OF **123**

ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation.)

Department Chairperson _____ Date 11/08/2012

Dean of College _____ Date DEC 10, 2012

Chairperson, College Curriculum Committee _____ Date Dec. 11, 2012

Chairperson, Senate Com. on UG or GR Studies _____ Date _____

Chairperson, Senate Coordinating Com. _____ Date _____

Secretary, Faculty Senate _____ Date _____

Date of Senate Resolution _____ Date to be Effective _____

Registrar _____ Program Code _____ Date _____

Vice Provost for Academic Affairs & International Programs _____ Date _____

Provost _____ Date _____

Board of Trustee Notification _____ Date _____

Revised 02/09/2009 /khs