

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 831-6975

Department: Mechanical Engineering email address Keefe@udel.edu

Date: 10/9/2009

Action: revise Mechanical Engineering Degree - concentration in Aerospace Engineering

(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 2010 Fall

(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: NA

Proposed new name for revised or new major / minor / concentration / academic unit (if applicable)

Revising or Deleting:

Undergraduate major / Concentration: Mechanical Engineering – Aerospace (ASEG)

(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor: NA

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

Graduate Program Policy statement change: NA

(Must attach your Graduate Program Policy Statement)

Graduate Program of Study: NA

(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration: NA

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)?

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the Course Challenge list. If there are no new courses enter "None")

None

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

Not Applicable

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.)

We need to remove MEEG481 from the list of possible electives for the Aerospace Concentration as the software necessary for that class is no longer readily available therefore the course is being deleted from the catalog (course deletion form is in current course-challenge cycle).

To replace and give our students options, there have been two new courses introduced since the concentration was approved that are very appropriate and the faculty of the department are in unanimous agreement that they should be added to the list of possible electives for the Aerospace Concentration. Both of these courses have already been approved through the course-challenge cycle and exist in the catalog:

MEEG414, Analysis of Aircraft Structure (3 credits)

Deals with analysis and design of flight structures and other light-weight structures. Loads, supports and reactions, constitute equations, and stress and deformation of components for flight vehicles are investigated. Overview of fatigue, vibration (flutter) and instability of structures are given.

MEEG435, Wing Power Engineering (3 credits)

Includes an historical overview, the energetics of wind power, wind turbine aerodynamics, and the basics of related dynamical, structural and electrical aspects of wind power. There is also a class visit to a nearby wind farm.

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.)

Changes to the catalog are shown below (red is addition, strikethrough is text eliminated).

**DEGREE: BACHELOR OF MECHANICAL ENGINEERING
MAJOR: MECHANICAL ENGINEERING
CONCENTRATION: AEROSPACE ENGINEERING**

Students may add this Concentration to their Bachelor of Mechanical Engineering Major starting as early as the end of their sophomore year. To qualify for a Concentration in Aerospace Engineering, Mechanical Engineering students must complete all requirements for the Bachelor of Mechanical Engineering degree. In addition, the student is required to complete at least 12 credits in accord with the following requirements. (Note that all of these courses may also be used to satisfy technical elective requirements for the BME degree.)

CURRICULUM	CREDITS
MAJOR REQUIREMENTS	
Required Course	
All students must take the following course:	
MEEG 432 Aerodynamics	3
Advanced courses in Aerospace Engineering.	
Three of the following three-credit courses must also be taken:*	
MEEG 411 Structural Mechanics for Mechanical and Aerospace Engineering	3
MEEG 414 Analysis of Aircraft Structure	3
MEEG 419 Mechanical Behavior of Materials and Structures	3
MEEG 423 Vibrations	3

MEEG 435	Wind Power Engineering	3
MEEG 481	Computer Solution of Engineering Problems	3
MEEG 616	Composite Materials Structures	3
MEEG 624	Control of Dynamic Systems	3
MEEG 636	Fluid Mechanics Measurements	3
MEEG 655	Principles of Composite Manufacturing	3
CIEG 401	Introduction to the Finite Element Method	3

*Independent study, Senior Research and additional courses for satisfying this requirement can be approved by the Department.

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

Department Chairperson *[Signature]* Date 10/13/09

Dean of College *[Signature]* Date 10/20/09

Chairperson, College Curriculum Committee *[Signature]* Date 11/23/09

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 _____