

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: ___David C. Martin___ phone number ___X2062___

Department: ___Materials Science and Engineering___ email address ___milty@udel.edu___

Date: ___3/2/10___

Action: ___add a new 4+1 BS or BE/MMSE degree in Materials Science and 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 ___10F___
(use format 04F, 05W)

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

Proposed change leads to the degree of: ___MMSE (no change)___
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name: ___4+1 BS or BE /MMSE___
Proposed new name for revised or new major / minor / concentration / academic unit
(if applicable)

Revising or Deleting:

Undergraduate major / Concentration: _____
(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.

Attached

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/>

NA

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.)

Currently, the Materials Science and Engineering Department offers an MMSE (Masters of Materials Science and Engineering) as a non-thesis master's degree. This degree is offered primarily as a part-time, professional master's degree program for working professionals. In an effort to expand our graduate student enrollment at the master's degree level (consistent with University strategic plan), we propose to include full-time students in this program as well. The proposed 4+1 BSE/MMSE program will give highly qualified and motivated undergraduates from a number of different departments in the College of Engineering (Chemical, Mechanical, Electrical and Computer, and Civil and Environmental) as well as from the College of Arts and Sciences (Biology, Chemistry, Physics) a chance to earn both a BS and an MMSE degree in five years of full-time study.

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.)

No changes to requirements of current undergraduate or graduate degrees. However will allow six credits of the required MSEG6XX courses that were counted as electives in the undergraduate program to also count toward the graduate degree.

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

Department Chairperson _____ Date _____

Dean of College _____ Date _____

Chairperson, College Curriculum Committee _____ Date _____

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

GRADUATE PROGRAM

Materials Science and Engineering

ADMISSION TO PROGRAM

Students are admitted into the graduate program for either a Master's or a doctoral, Ph.D., degree. For students with a bachelor's degree the following minimum criteria will normally be applied:

1. A baccalaureate degree in mechanical engineering or in a closely related field of science or mathematics.
2. An undergraduate grade point average in engineering, science and mathematics courses of at least 3.0 on a 4.0 scale.
3. A minimum of at least three letters of strong support from former teachers or supervisors.
4. A minimum combined Quantitative and Verbal score of 1200 in the Graduate Record Examination Aptitude Test.
5. A minimum score of 600 (or IBT equivalent) in the Test of English as a Foreign Language for students whose

first language is not English. This test is not required of students whose first language is English and who have received an undergraduate or post-graduate degree from a College or University in which English is the sole language of instruction.

Admission with financial aid is granted on a competitive basis; therefore, satisfaction of the above minimum standards does not guarantee admission. All admissions require approval of the Office of Graduate Studies.

For applicants with no prior training in engineering, the same minimum criteria will apply. In addition, their records will be reviewed in relation to the intended program of study. Provisional status with specific remedial work may be a basis for acceptance of such applicants.

The acceptance of applicants who have already received a Master's degree in engineering will be based on the above minimum criteria and the results of their graduate work.

ADMISSION TO THE 4+1 BS or BE/MMSE PROGRAM

The department offers a special 4+1 BS or BE/MMSE program for highly-qualified undergraduate students from the University of Delaware. This program allows the student to earn both a BS or BE (depending on the unit) from one of several partnering departments (including BE degrees from Chemical Engineering, Mechanical Engineering, Electrical and Computer Engineering, and Civil and Environmental Engineering in the College of Engineering, and BS degrees from Biology, Chemistry, and Physics in the College of Arts and Sciences) and the MMSE degree in 5 years of full-time study at the University of Delaware. Students would normally apply in the spring of their junior year. For admission to this program the following minimum criteria will be applied:

1. An undergraduate grade point average of at least 3.2 on a 4.0 scale at the end of their junior year.
2. A minimum of two letters of support from professors at the University of Delaware.

ADVISEMENT

A temporary academic advisor is assigned to new students when they are admitted to the Department. Students select their permanent advisor once they become familiar with the department, and clear about their research interests. The permanent advisor will be someone whose interest matches the interest of the student insofar as possible. For students on Research Assistantships, the advisor directs their research and advises them on course selection.

Masters in Materials Science and Engineering (MMSE) Program Requirements

Two options are available, one with a thesis and the other by lecture course credit only. The first is available to all students, the second is only available to Outreach or part-time students and does not require a thesis. Transfer is not permitted from the first to the second option, although transfer is acceptable from the second to the first.

MMSE with Thesis

Coursework

24 credit hours of course work and 6 credit hours of thesis research are necessary for the thesis-option Master's degree.

The following 3 credit courses, or their equivalent as approved by the faculty advisor and Chairperson, are required:

MSEG 803 Equilibria in Materials Systems

MSEG 804 Kinetics in Materials Systems

MSEG 602 Structure of Materials

MSEG 607 Physical Properties of Materials I

MSEG 630 Introduction to Polymer Science and Engineering

The remaining 15 credits of elective courses will be chosen after discussion with the advisor, and will usually be related to the student's area of research interest.

Thesis

Six credit hours of thesis work must be completed, and the thesis must be accepted by both the research advisor and the Chairperson of the Materials Science and Engineering Faculty. A formal defense of the Master's thesis before the committee may be required.

Thesis advisors and graduate student advisory committees will be appointed by the Materials Science and Engineering Faculty after discussions with the student and his/her advisor. Changes in advisor or advisory committee are made either by informal agreement (the usual policy) or by action of the Materials Science and Engineering Faculty in which final authority in all such matters resides.

MMSE without Thesis

30 credit hours of lecture course work are necessary for the Master's degree without thesis.

The following 3 credit courses, or their equivalent as approved by the faculty advisor and Chairperson, are required:

MSEG 803 Equilibria in Materials Systems

MSEG 804 Kinetics in Materials Systems ?

MSEG 602 Structure of Materials ?

MSEG 607 Physical Properties of Materials I

MSEG 630 Introduction to Polymer Science and Engineering

The remaining 15 credits of elective courses will be chosen after discussion with the advisor, and will usually be related to the student's area of interests.

4+1 BS or BE/MMSE PROGRAM

Students admitted to the 4+1 BS or BE/MMSE program must meet all the above requirements for the MMSE degree. However, these students are required to complete two of the required courses during enrollment in the BS or BE degree. These two courses can also be counted toward meeting the technical elective requirements of the respective BS or BE degree.