

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: Dr. Charles Boncelet

phone number: 831-8008

Department: Electrical & Computer Engineering

email address: Boncelet@ee.udel.edu

Action: Revise minor

(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: NA

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

Proposed change leads to the degree of: NA

(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: Revising

Undergraduate major / Concentration: _____

(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor: Bioelectrical Engineering

(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)?

(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")

BMEG 401, Systems Physiology I, (course currently going through this year's course cycle for approval

to be added to Biomedical Engineering major). We want this new course to be an option for Part II of the minor – all students must complete one of the following courses:

BISC 306 or ELEG 471.

Also, we want to add BMEG 330, Biomedical Instrumentation, as another option to Part III of the minor – all students must complete two of the following courses:

BMEG 330, ELEG 475, 478, 479, 676, 680, BISC 627 or KAAP 688.

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”)

The BMEG program is not yet a department, but BMEG 401 may see some additional enrollment. However, the course is often taught by ECE faculty.

Describe the rationale for the proposed program change(s):

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

Give the students additional flexibility in meeting the minor.

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.)

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 _____

Current**MINOR IN BIOELECTRICAL ENGINEERING**

A minor in Bioelectrical Engineering may be earned by a student in any University bachelor's degree program. This minor provides students with an opportunity to integrate physiology and biological sciences with engineering aspects in signal measurement and processing. To qualify for a Minor in Bioelectrical Engineering, students must complete a minimum of 21 credits as described below with a minimum grade of C- in each course.

CURRICULUM	CREDITS
Course Requirements	
(1) All students must take the following three courses:	
BISC 207 (a) Introductory Biology I	4
MATH 242 Analytic Geometry and Calculus B	4
PHYS 202 (b) or PHYS 208 (b) Introductory Physics II	4
(2) And one of the following courses:	
BISC 306 General Physiology	3
ELEG 471 Mathematical Physiology	3
(3) And two of the following courses (c):	
ELEG 475 Image Processing with Biomedical Applications	3
ELEG 478 Introduction to Nano and Biophotonics	3
ELEG 479 Introduction to Medical Imaging Systems	3
ELEG 676 Bioinformatics and Biosystems Analysis I	3
ELEG 680 Immunology for Engineers	3
BISC 627 Neuroscience II	3
HESC 688 Electromyographic Kinesiology	3
TOTAL CREDITS	21

(a) BISC 208 cannot be substituted for BISC 207.

(b) It is understood that PHYS 201/PHYS 207 is taken before PHYS 202/PHYS 208.

(c) The listed 400 and 600-level courses are open to any student who has completed requirements (1) and (2) and the necessary prerequisites (or obtained permission of instructor). Other courses can be included upon approval by the minor administration committee.

Further inquiries about the Bioelectrical Engineering Minor can be made to Professor Takashi Buma at (302) 831-8447 or buma@ece.udel.edu

Revised**MINOR IN BIOELECTRICAL ENGINEERING**

A minor in Bioelectrical Engineering may be earned by a student in any University bachelor's degree program. This minor provides students with an opportunity to integrate physiology and biological sciences with engineering aspects in signal measurement and processing. To qualify for a Minor in Bioelectrical Engineering, students must complete a minimum of 21 credits as described below with a minimum grade of C- in each course.

CURRICULUM	CREDITS
Course Requirements	
(1) All students must take the following three courses:	
BISC 207 (a) Introductory Biology I	4
MATH 242 Analytic Geometry and Calculus B	4
PHYS 202 (b) or PHYS 208 (b) Introductory Physics II	4
(2) And one of the following courses:	
BISC 306 General Physiology	3
ELEG 471 Mathematical Physiology	3
BMEG 401 Systems Physiology I	3
(3) And two of the following courses (c):	
ELEG 475 Image Processing with Biomedical Applications	3
ELEG 478 Introduction to Nano and Biophotonics	3
ELEG 479 Introduction to Medical Imaging Systems	3
ELEG 676 Bioinformatics and Biosystems Analysis I	3
ELEG 680 Immunology for Engineers	3
BISC 627 Neuroscience II	3
KAAP 688 Electromyographic Kinesiology	3
BMEG 330 Biomedical Instrumentation	3
TOTAL CREDITS	21

(a) BISC 208 cannot be substituted for BISC 207.

(b) It is understood that PHYS 201/PHYS 207 is taken before PHYS 202/PHYS 208.

(c) The listed 400 and 600-level courses are open to any student who has completed requirements (1) and (2) and the necessary prerequisites (or obtained permission of instructor). Other courses can be included upon approval by the minor administration committee.

Further inquiries about the Bioelectrical Engineering Minor can be made to Professor Michael Haney at (302) 831-4299 or haney@ee.udel.edu