

Cover Sheet: Request 16115

EEE4260C Bioelectrical Systems

Info

Process	Course Modify Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Shannon Chillingworth schill@ece.ufl.edu
Created	4/20/2021 2:28:46 PM
Updated	4/30/2021 5:45:06 PM
Description of request	Change lab designation and reduce course credits.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Electrical and Computer Engineering 19050000	Robert Fox	Remove lab and reduce 4 credits to 3	4/23/2021
No document changes					
College	Approved	ENG - College of Engineering	Heidi Dublin	Approved by Curriculum committee	4/30/2021
EEE4260C Bioelectrical Sys Syll UCC2.docx					4/30/2021
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			4/30/2021
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Catalog					
No document changes					
Student Academic Support System					
No document changes					
College Notified					
No document changes					

Course|Modify for request 16115

Info

Request: EEE4260C Bioelectrical Systems

Description of request: Change lab designation and reduce course credits.

Submitter: Shannon Chillingworth schill@ece.ufl.edu

Created: 9/3/2021 3:57:32 PM

Form version: 5

Responses

Current Prefix

Enter the current three letter code (e.g., POS, ATR, ENC).

Response:

EEE

Course Level

Select the current one digit code preceding the course number that indicates the course level at which the course is taught (e.g., 1=freshman, 2=sophomore, etc.).

Note: 5000 level courses must be submitted through the undergraduate new course process

Response:

4

Number

Enter the current three digit code indicating the specific content of the course based on the SCNS taxonomy and course equivalency profiles.

Response:

260

Lab Code

Enter the current lab code. This code indicates whether the course is lecture only (None), lab only (L), or a combined lecture and lab (C).

Response:

C

Course Title

Enter the current title of the course as it appears in the Academic Catalog. There is a 100 character limit for course titles.

Response:

Bioelectrical Systems

Effective Term

Select the requested term that the course change(s) will first be implemented. Selecting "Earliest" will allow the change to be effective in the earliest term after SCNS approval. If a specific term and year are selected, this should reflect the department's expectations. Courses cannot be changed retroactively, and therefore the actual

effective term cannot be prior to SCNS approval, which must be obtained prior to the first day of classes for the effective term. SCNS approval typically requires at least 6 weeks after approval of the course change at UF.

Response:

Fall

Effective Year

Select the requested year that the course change will first be implemented. See preceding item for further information.

Response:

2022

Requested Action

Indicate whether the change is for termination of the course or any other change. If the latter is selected, all of the following items must be completed for any requested change.

Response:

Other (selecting this option opens additional form fields below)

Change Course Prefix?

Response:

No

Change Course Level?

Note that a change in course level requires submission of a course syllabus.

Response:

No

Change Course Number?

Response:

No

Change Lab Code?

Note that a change in lab code requires submission of a course syllabus.

Response:

Yes

Current Lab Code

Response:
C

Proposed Lab Code

Response:
None

Change Course Title?

Response:
No

Change Transcript Title?

*If changing the course title a new transcript title is also required. *

Response:
No

Change Credit Hours?

Note that a change in credit hours requires submission of a course syllabus.

Response:
Yes

Current Credit Hours

Response:
4

Proposed Credit Hours

Response:
3

Change Variable Credit?

Note that a change in variable credit status requires submission of a course syllabus.

Response:
No

Change S/U Only?

Response:
No

Change Contact Type?

Response:
No

Change Rotating Topic Designation?

Response:
No

Change Repeatable Credit?

Note that a change in repeatable credit status requires submission of a course syllabus.

Response:
No

Change Course Description?

Note that a change in course description requires submission of a course syllabus.

Response:
No

Change Prerequisites?

Response:
No

Change Co-requisites?

Response:

No

Rationale

Please explain the rationale for the requested change.

Response:

The learning objectives are not supported by laboratory assignments. In addition, the nature of the course makes it difficult to synchronize appropriate laboratory assignments. We are removing 3 contact hours/1 credit hour.

Bioelectrical Systems
EEE 4260C Section 18H7, 22D1
Class Periods: Tuesdays, Period 4 (10:40AM-11:30AM),
Thursdays P4-P5 (10:40AM-12:35PM),
Location: Lecture: BEN 0328
Academic Term: [Spring 2022](#)

Instructor:

Dr. Karim Oweiss
Office location: 457 NEB
Telephone: 352-294-1898
E-mail address: koweiss@ufl.edu
Class Web site: <https://ufl.instructure.com/courses>
Office hours: Tu 2:00-3:00 PM Th 2:00-3:00 PM

Teaching Assistant/Peer Mentor/Supervised Teaching Student:

Please contact through the Canvas website

- [TBN](#)

Course Description

Covers the theoretical and quantitative perspective of bioelectrical signals reflecting the activity of the brain, the muscles, and the heart. Bases of modeling, measuring, processing and analyzing bioelectrical signals are discussed, as well as common clinical applications.

Course Pre-Requisites / Co-Requisites

EEL 3008 and EEL 3112 or permission from the instructor

Course Objectives

The student will learn the physiological basis of bioelectrical signals; will be able to quantitatively describe and model physiologic systems; and will be able to process and analyze measurements from living systems.

Materials and Supply Fees

n/a

Professional Component (ABET):

[This course consists of 3 credits of Engineering Science;](#)

Relation to Program Outcomes (ABET):

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	High
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	High
3. An ability to communicate effectively with a range of audiences	Low
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the	

impact of engineering solutions in global, economic, environmental, and societal contexts	
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	Low
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	High

*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not covered or assessed in the course.

Required Textbooks and Software

Free e-book access at UF Library

- a. Title: **Bioelectricity: A Quantitative Approach**, by R. Plonsey and R. Barr, 3rd Edition, ISBN number: 0387488642
- b. Software: **Matlab** with Simulink Student Edition

Recommended Materials

- Supplemental material and lecture notes to be assigned and provided via course website

Course Schedule

Week 1: Introduction, Elements of Bioelectricity, Vector Calculus Review

Week 2: The Conservation Principle, HW1 due

Week 3: Lumped- and Distributed Parameter Models of Cells, HW2 due

Week 4: Biosignals, Bioelectric Potentials, and Noise, HW3 due

Week 5: Pumps and Channels, Quiz 1

Week 6: Hodgkin and Huxley Model, Exam 1

Week 7: Action Potentials, HW4 due

Week 8: Impulse Propagation, HW5 due

Week 9: Transmembrane and Field Stimulation, HW6 due

Week 10: Extracellular Fields, Quiz 2

Week 11: Sensor Technology, Exam 2

Week 12: The Neuromuscular Junction and Skeletal Muscle, HW7 due

Week 13: Cardiac electrophysiology

Week 14: Functional Electrical Stimulation, Quiz 3

Week 15: Review

Final Exam

Attendance Policy, Class Expectations, and Make-Up Policy

1. Homework is always due on Thursdays
2. **Attendance is required** for all lectures unless otherwise noted by a course website announcement. **YOU ARE EXPECTED TO ATTEND > 85% OF THE LECTURES.** Cell phones and other electronic devices are to be silenced and used only upon instruction. No text messaging during class or exams.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Excused absences must be consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation.

- Homework and Make-Up Exam Policy** – Late homework will receive a 20% deducted per day unless prior arrangements were made with the instructor. No late homeworks will be accepted after solutions are posted on CANVAS.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Homework Sets (7)	100 each	15%
Quizzes (3)	100 each	15%
Midterm Exam 1	100	20%
Midterm Exam 2	100	20%
Final Exam	100	30%
		100%

There will be 7 homework assignments throughout the semester, the material of which will be drawn from the textbook and lectures. Homework exercises serve to provide practice fundamental methods learned in class. Homework assignments must be done individually, and their due dates will be announced in advance.

Grading Policy

The following is given as an example only.

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.ua.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their

Canvas course menu under GatorEvals, or via <https://ufl.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.ua.ufl.edu/public-results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html>

Campus Resources:

Health and Wellness

U Matter, We Care:

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.
<https://lss.at.ufl.edu/help.shtml>.

Career Connections Center, <https://career.ufl.edu/>, 392-1601. **Reitz Union. Career development assistance and counseling.**

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.
<https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.
<https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: <https://care.dso.ufl.edu>.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>.