FLORIDA ATLANTIC UNIVERSITY

COURSE CHANGE REQUEST
Undergraduate Programs

Department Ocean & Mechanical Engineering

College Engineering & Computer Science

UUPC Approval 2/27/23
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

***Current* Course Prefix and Number**	EGM 4045	***Current* Course Title**	Electro-Mechanical Devices

*Syllabus must be attached for **ANY** changes to current course details. See Checklist. Please consult and list departments that may be affected by the changes; attach documentation.*

Change title to:

Change prefix
From: **To:**

Change course number
From: **To:**

Change credits*
From: **To:**

Change grading
From: **To:**

Change WAC/Gordon Rule status**
Add ☐ **Remove** ☐

Change General Education Requirements***
Add ☐ **Remove** ☐

*Review Provost Memorandum
**WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines.
***General Education criteria must be indicated in syllabus and approval attached to this form. See GE Guidelines.

Change description to:

Change prerequisites/minimum grades to:
1. MAP 3305 or MAP 2302, 2. PHY 2044, 3. EGN 2213, all with a grade of C or above

Change corequisites to:

Change registration controls to:

Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).

Effective Term/Year for Changes:	Fall 2023	**Terminate course? Effective Term/Year for Termination:**	

Faculty Contact/Email/Phone Dr. P. Edgar An / pan@fau.edu / 561-297-2792

Approved by		***Date***
Department Chair	Pierre Philippe Beaujean	1/30/2023
College Curriculum Chair	Hongbo Su (Digitally signed by Hongbo Su, DN: CN=Hongbo Su, O=FAU, OU=FAU, E=suh@fau.edu, C=US, Reason: I am the author of this document, Location: your signing location here, Date: 2023.02.06 08:16:38-05'00', Foxit Reader Version: 10.1.1)	02/09/2023
College Dean		2/9/23
UUPC Chair	Ethlyn Williams	2/27/23
Undergraduate Studies Dean	Dan Meeroff	2/27/23
UFS President		
Provost		

Email this form and syllabus to mjenning@fau.edu seven business days before the UUPC meeting.

Department of Ocean and Mechanical Engineering, Florida Atlantic University
Course Syllabus

Revised Date: Dec 21, 2022

1. Course title/number, number of credit hours

EGM 4045 – Electro-mechanical Devices	3 credit hours

2. Instructional Method

This class consists of lectures and labs conducted in the assigned classroom and on the scheduled day and time. All students are required to attend in person for lectures, labs, quizzes, and exams.

Study Habits

- Budget 3 hours per week to study outside the classroom for each credit hour. That is 9 hours of study per week outside the classroom.
- Take notes when watching live lectures, and summarize/organize the notes afterward
- Spend 20 minutes reviewing the notes and refreshing your memory before any new lecture
- Do ALL the homework problems and practice quizzes by yourself (do not just look at the solutions)
- Take advantage of office hours available
- Form study groups
- Do not binge study for quizzes and exams. It does not work for this class!

Student Recording of Class Lectures

Students enrolled in this course may record video or audio of class lectures for their personal educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach students about a particular subject. Recording class activities other than class lectures, including but not limited to student presentations (whether individually or as part of a group), class discussion (except when incidental to and incorporated within a class lecture), labs, clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, and private conversations between students in the class or between a student and the lecturer, is prohibited. Recordings may not be used as a substitute for class participation or class attendance and may not be published or shared without the written consent of the faculty member, except it may be shared with university officials in connection with a complaint to the university or as evidence in a criminal or civil proceeding.

If a student publishes a recording of a class lecture without the faculty member's written permission, and it is not in connection with a complaint to the university or as evidence in a criminal or civil legal proceeding, the student could face severe legal and/or disciplinary consequences. Florida law allows an injured party to sue for damages, including attorneys' fees, totaling as much as $200,000.00. Failure to adhere to these requirements may also constitute a violation of the University's Student Code of Conduct and/or the Code of Academic Integrity.

3. Course pre-requisites, co-requisites, and where the course fits in the program of study

Prerequisites:

1. Eng Math I (MAP 3305) or Differential Equations (MAP 2302)
2. Physics for Engineers II (PHY 2044)
3. Comp Apps in Eng I (EGN 2213)

All with a grade of C or above

If students have not completed the required prerequisites for the course and do not inform their course instructor and advisor, they will be dropped from the course. If this occurs after the first week of the semester, they will be fee liable to the University.

4. Course logistics

Term: Fall 2023
Lectures: TR 12:30-1:50 pm, (GS 101)
Labs: F 9:30-10:50 am (EW162)

Department of Ocean and Mechanical Engineering, Florida Atlantic University
Course Syllabus

F 12:30-1:50 pm (EW162)	
5. Instructor contact information	
Instructor's name	Dr. An
Office address	EW 174, Boca Raton Campus
Office Hours	Office hours (T 2-4 pm, W 3-5 pm, R 2-4 pm)
Contact telephone number	561–297–2792
Email address	pan@fau.edu
6. TA contact information	
TA's name	Brandon Yu
Office address	
Office Hours	By appointment
Contact telephone number	
Email address	byu2016@fau.edu
7. Course description	
Introduction to basic DC and AC circuits; passive and active filtering; DC and AC motors; and Arduino micro-controller for hardware and software interfaces.	
8. Course objectives/student learning outcomes/program outcomes	
Course objectives	This course is designed to introduce the students to concepts: 1) analysis of basic DC and AC circuits; 2) analysis and implementation of simple passive and active filtering; 3) basic operations of DC and AC motors, and 4) micro-controller for sensor and actuator interfaces.
Student learning outcomes & relationship to ABET 1-7 objectives	1. Students will be able to analyze DC circuits with multiple sources. (1) 2. Students will be able to analyze transient responses in RL, RC, and RLC circuits. (1) 3. Students will be able to use phasors to analyze frequency response and its applications. (1) 4. Students will understand the basic principles of AC and DC motors. (1) 5. Students will be able to analyze and implement simple passive and active filters. (1) 6. Students will be able to implement hardware and software interfaces for simple sensors. (6) 7. Students will be able to implement hardware and software interfaces for DC motors. (6)
9. Course evaluation method	
Chapter Review – 5% (CONNECT) Homework – 10% (best of 3 attempts, CONNECT) Labs – 10% Quizzes – 20% Attendance – 5% Term Project – 10% Exam 1 –20% Exam 2 – 20% Final Exam – 20% The lowest homework and quiz scores will be dropped. The final exam can be waived if the overall grade by the last week of the semester is maintained at 70% or above. If possible, the final exam score will replace the lowest of any of the exam scores. Otherwise, the final exam score will not be included in the course grade. You can think of the final exam as a makeup exam if you did not do well in any of the exams.	

Grading Policy

1) all the steps are correct and the final answer is correct:	100%
2) overall most of the steps are correct, but the final answer is wrong:	90%
3) the steps show the majority of concepts are correct but have numerous errors:	70%
4) the steps show some fundamental errors and are far from completing the problem:	40%
5) no steps included other than the answer is correct:	10%
6) blank, no steps:	0%

10. Course grading scale

> 90.0	A
86.7-90.0	A-
83.3-86.7	B+
80.0-83.3	B
76.7-80.0	B-
73.3-76.7	C+
70.0-73.3	C
66.7-70.0	C-
63.3-66.7	D+
60.0-63.3	D
56.7-60.0	D-
< 56.7	F

11. Policy on makeup tests, late work, and incompletes

Makeup tests are given only if there is solid evidence of a medical or otherwise serious emergency before the tests that prevented the student from participating in the exam. Makeup exams should normally be administered and proctored by department personnel unless there are other pre-approved arrangements. During pandemic times, makeup exams and quizzes will be proctored using Canvas's Lockdown Browser and Respondus Monitor.

***Late work* without verifiable justification will NOT be graded.**

Incomplete grades are against the policy of the department. Unless there is solid evidence of a medical or otherwise serious emergency incomplete grades will not be given.

12. Special course requirements

N/A

13. Classroom etiquette policy

University policy requires that to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones, are to be turned off in-class sessions.

14. Attendance Policy Statement

Students are expected to attend all their scheduled University classes and satisfy all academic objectives outlined by the instructor. The effect of absences o*n* grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance.

Students are responsible for arranging to make up work missed because of legitimate class absences, such as illness, family emergencies, military obligations, court-imposed legal obligations, or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances, and debate activities. It is the student's responsibility to give the instructor notice before any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved

reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

15. Disability Policy Statement

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie, and Jupiter – however, disability services are available for students on all campuses. For more information, please visit the SAS website at *www.fau.edu/sas/*

16. Counseling and Psychological Services Center

Life as a university student can be challenging physically, mentally, and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students with a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to http://www.fau,edu/counseling/

17. Code of Academic Integrity Policy Statement

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards because it interferes with the university's mission to provide a high-quality education in which no student enjoys an unfair advantage over any other.
Academic dishonesty is also destructive to the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. See University Regulation 4.001 at
www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf

Cell phones are not allowed during exams. If cell phones or any form of cheating are detected during any exam period, this will result in a **grade of "zero" on that exam and a note in the student's academic file.**

18. Required texts/reading/Lab kits

Textbook:
Connect 3P Inclusive Access Online Access (1 Semester) for Fundamentals of Electric Circuits

e-Textbook:
https://ebookcentral.proquest.com/lib/fau/detail.action?docID=6328330 (3 users at a time)
Before clicking the link students will need to authenticate via OpenAthens.
It is best if students read online and only download pages they want to print. (avoid the "Download Book" option) because it could allow a few persons to hoard access to the book. Reading online allows more people to gain access. Here are the restrictions set by the publisher, when you get to this page if you roll down the screen you will see the book divided by chapters and that is the best method for accessing the book:

19. Supplementary/recommended readings

Lecture notes provided by the instructor

20. Course topical outline, including dates for exams/quizzes, papers, completion of reading

Tentative Course Topics:

1. Characteristics of resistance, inductance, and capacitance components
2. Series and parallel connections of components
3. Analysis of circuits using Kirchhoff's laws and Ohm's law
4. DC and AC circuits using nodal and mesh analyses
5. Transient responses in RLC circuits
6. Sinusoids and phasors in AC circuits
7. Frequency response analysis in AC circuits
8. Basic characteristics of AC and DC motors
9. Arduino hardware and software interfaces

Important Dates

The last day to drop the course without receiving an F: March 24, 2022 (Friday)

Quiz: Only on Thursdays (about 20 minutes each). Tentatively, there is approximately 1 quiz every 2 weeks unless otherwise stated.

Tentative Exam Dates

Exam 1:	Mar 2, 2023 (Thursday)
Exam 2:	Apr 20, 2023 (Thursday)
Final Exam:	Apr 27, 2023 (Thursday, 10:30 – 1:15 pm)