FLORIDA ATLANTIC UNIVERSITY

COURSE CHANGE REQUEST
Undergraduate Programs

Department Ocean & Mechanical Engineering

College Engineering & Computer Science

UUPC Approval 10/9/2023
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

***Current* Course Prefix and Number**	EML 4551	***Current* Course Title**	RI: Design Project

*Syllabus must be attached for **ANY** changes to current course details. See Template. 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** ☐

*See Definition of a Credit Hour.
**WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines.
***GE criteria must be indicated in syllabus and approval attached to this form. See Intellectual Foundations Guidelines.

Change description to:

Change prerequisites/minimum grades to:
EML 4521C - RI: Engineering Design with minimum grade of "C"

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:	Spring 2024	**Terminate course? Effective Term/Year for Termination:**	

Faculty Contact/Email/Phone Dr. Davood Moslemian/moslemia@fau.edu/561-297-2652

Approved by		***Date***
Department Chair	Pierre Philippe Beaujean	9/25/2023
College Curriculum Chair	Hongbo Su	09/25/2023
College Dean		9/25/23
UUPC Chair	Korey Sorge	10/9/2023
Undergraduate Studies Dean	Dan Moeroff	10/9/2023
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

1. Course title/number, number of credit hours

EML 4551 – RI: Design Project	3 credit hours

2. Instructional Method

This class will be conducted in person with remote option. Lecture material will be also available through Canvas. Some presentations and meetings will be required to be in- person.

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

List Prerequisites

EML 4521C – RI: Engineering Design

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

Time & Location: T TH 12:30 pm – 1:50pm; Boca Campus General South room 116
Space for projects: EW Room 130.

5. Instructor contact information

Instructor's name : Dr. Mike Kim
Office address : EW room 181
Office Hours : Tu. & Th.: 2:30 pm – 3:30pm
Contact telephone number: 561-297-3442
Email address: kimm@fau.edu

6. TA contact information

TA's name *Office address* *Office Hours* *Contact telephone number* *Email address*	

7. Course description

The students will work together in a team environment to bring the project to completion. This will involve the use of engineering analysis and design methodologies. The course will improve their team participation and management skills, along with their written and oral communication skills. It will make the students aware of both safety and environmental issues.

This is a research-intensive (RI) course.

The students will work together in a team environment to initiate the project. This will involve the use of engineering analysis and design methodologies. The course will improve teamwork, engagement, and management skills, along with written and oral communication skills. It will make the students aware of both safety and environmental issues.

This course contains an assignment or multiple assignments designed to help students conduct research and inquiry at an intensive level. If this class is selected to participate in the university-wide assessment program, students will be asked to complete a consent form and submit electronically some of their research assignments for review. Visit the Office of Undergraduate Research and Inquiry (OURI) for additional opportunities and information at http://www.fau.edu/ouri.

8. Course objectives/student learning outcomes/program outcomes

Course objectives	
Student learning outcomes & relationship to ABET 1-7 objectives	**Course Outcomes:** (numbers in parentheses indicate correlation of the outcome with the appropriate ABET program outcomes *1-7*) 1. The students will be able to formulate and analyze problems, and synthesize and develop solutions based on fundamental principles. (1,2,6) 2. The students will design basic mechanical components or processes to meet desired specifications using appropriate engineering tools and techniques. (1,2,6) 3. The students will demonstrate an understanding of professional, societal and ethical responsibility. (4) 4. The students will function effectively in teams and communicate their ideas to their peers. (3,5) 5. The students will recognize the need to engage in life-long professional development and learning. (4,7)

9. Course evaluation method

Project Grading:

Oral/Presentation Skills (30 pts)
- Progress Presentations 5 pts
- Mid-Term Presentation 10 pts
- Final Presentation 10 pts
- Final Video/Showcase 5 pts

Written Communication (30 pts)
- Midterm Report 10 pts
- Final Project Report 20 pts

Fabrication and System Performance (25 pts)
- Test Plan 5 pts
- Fabrication and Construction 10 pts
- Performance 10 pts

Teamwork and Participation (15pts)
- Team Leaders and Peer Evaluation 5 pts
- Instructor Evaluation 5 pts
- Attendance, participation 5 pts

10. Course grading scale

The minimum grade required to pass the course is C	
Letter Grade	**Percent (%)**

A	93-100
A-	90-93
B+	85-90
B	80-85
B-	75-80
C+	70-75
C	65-70
C-	60-65
D+	55-90
D	50-55
D-	45-50
F	0-45

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

Submission Deadline

Submission is ALWAYS due on or before 11:59 pm of the due date.

Makeup presentations are allowed only if there is solid evidence of a medical or otherwise serious emergency that prevented the student from participating.

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

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

12. Special course requirements

- *Projects are expected to achieve all six of the following OURI Student Learning Outcomes (SLOs):*
  - *SLO 1: Knowledge. Students are expected to demonstrate content knowledge, and knowledge of core principles and skills.*
  - *SLO 2: Formulate Questions. Students are required to formulate research questions, scholarly or creative problems in a manner appropriate to the planning discipline.*
  - *SLO 3: Plan of Action. Students are expected to develop and implement a plan of action to address research and inquiry questions or scholarly problems.*
  - *SLO 4: Critical Thinking. Students are expected to apply critical thinking skills to evaluate information, their own work, and the work of others.*
  - *SLO 5: Ethical Conduct. Students are expected to identify significant ethical issues in research and inquiry and/or address them in practice.*
  - *SLO 6: Communication. Students will convey all aspects of their research and inquiry (processes and/or products) in appropriate formats, venues, and delivery modes.*

OURI Student Learning Outcomes (SLO)	Description of Assignment Requirements and Assessments

SLO 1: Knowledge	Students will demonstrate a fundamental basis of discipline-specific knowledge required for effective professional practice in the fields of computer and electrical engineering. Students will also demonstrate working knowledge of tools and practical skills needed to analyze engineering design problems related to multiple realistic constraints, such as environmental issues, engineering economics, design codes, ethics, and/or other contemporary design issues.
SLO 2: Formulate Questions	Students will develop and refine a problem statement in which they specifically address their research questions. Students are expected to articulate the scope of the problem to be able to address the research question with an engineering solution. When appropriate, students should be able to create additional (albeit related) questions for smaller subsections of the overall design project.
SLO 3: Plan of Action	Students will create a plan of action that will include the problem statement (or research question), scope of work, literature review and background context, methodology or approach to the solution, analysis plan, conclusion and design documents. Students will develop a hypothesis if needed, identify research methods and alternative designs, and select appropriate statistical techniques, if warranted.
SLO 4: Critical Thinking	Students will demonstrate critical thinking skills by taking into consideration multiple perspectives and examining implications and consequences of design decisions or engineering alternatives. Students will also demonstrate an ability to use evidence and reasoning to objectively justify decisions and an ability to apply codes and design standards to make reasonable engineering judgments. Students are asked to peer review student work and provide feedback during the juried presentations.
SLO 5: Ethical Conduct	Students will familiarize themselves with the Code of Ethics of their engineering discipline. All work is held to the standards established by the governing professional societies of computer and electrical engineering disciplines.
SLO 6: Communication	Students will present and defend their work in written and oral formats (interim and final). All deliverables are expected to be of professional quality. Students are expected to demonstrate knowledge of technical report writing, graphical visualization, and persuasive presentation skills.

13. Classroom etiquette policy

University policy requires that in order 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. Policy on the Recording of Lectures

Students enrolled in this course may record video or audio of class lectures for their own 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. Failure to adhere to these requirements may constitute a violation of the University's Student Code of Conduct and/or the Code of Academic Integrity.

15. Attendance Policy Statement

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon 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 absence, such as illness, family emergencies, military obligation, 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 prior to 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.

16. 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/*

17. 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 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/

18. 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 mission to provide a high quality education in which no student enjoys unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and place 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 are detected during any exam periods, this will result in a **grade of "zero" on that exam and a note in the student's academic file.**

19. Required texts/reading/Lab kits

Lecture notes provided by instructor.

20. Supplementary/recommended readings

N/A

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

Course Topics:

Topics:

1. Application of the design process
2. Application creativity, problem-solving
3. Application of team building
4. Application of communication skills (report writing, oral presentation)
5. Application of project planning and management
6. Consideration of safety, hazard, and environmental issues.
7. Technical standards and codes

Tentative schedule subject to change

Task	**Due Date:**
Progress Presentation 1	Jan. 17 -19
Test Plan	Jan. 24
Mid-Term Report	Feb. 21
Mid-Term Presentation	Feb. 21 - 23
Fabrication & Construction Presentation	March 21-23
Final Presentations and Videos	April 25
Final Report	April 27
Final Video	TBD
Showcase	TBD