

 FLORIDA ATLANTIC UNIVERSITY	COURSE CHANGE REQUEST Undergraduate Programs	UUPC Approval <u>9/11/2023</u> UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	Department Ocean & Mechanical Engineering College Engineering & Computer Science	
Current Course Prefix and Number EML 4551	Current Course Title 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: RI: Design Project		Change description to: Add at end of course description: This is a research-intensive (RI) course.
Change prefix From: _____ To: _____		Change prerequisites/minimum grades to: 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-).
Change course number From: _____ To: _____		
Change credits * From: _____ To: _____		
Change grading From: _____ To: _____		
Change WAC/Gordon Rule status ** Add <input type="checkbox"/> Remove <input type="checkbox"/>		
Change General Education Requirements*** Add <input type="checkbox"/> Remove <input type="checkbox"/> <small>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.</small>		
Effective Term/Year for Changes: Fall 2023	Terminate course? Effective Term/Year for Termination:	
Faculty Contact/Email/Phone Dr. Davood Moslemian/moslemia@fau.edu/561-297-2652		
Approved by Department Chair <u>Pierre Philippe Brasseur</u> College Curriculum Chair <u>Hsiang Su</u> College Dean <u>[Signature]</u> UUPC Chair <u>Korey Sorge</u> Undergraduate Studies Dean <u>Dan Meeroff</u> UFS President _____ Provost _____		Date 4/7/2023 _____ 04/10/2023 _____ <u>04/12/2023</u> 9/11/2023 _____ 9/11/2023 _____

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

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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-class, and there is no remote option.	
3. Course pre-& co-requisites and where the course fits in the program of study	
<p>List Prerequisites, Co-requisites: Prerequisites: EML4521C Engineering Design</p> <p>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.</p>	
4. Course logistics	
<p>Term: Fall 2023 Time & Location: Tuesdays and Thursdays at 12:30 pm – 1:50 pm Lectures: EW 160. Fabrication/Assembly/Testing: EW 130.</p>	
5. Instructor contact information	
<p>Instructor’s name: Dr. Mike Kim Office address: Eng. West (EG 36) room 172 Office Hours : Tues. and Thurs 1:30-2:30pm or by appointment Contact telephone number: 561-297-3442 Email address: kimm@fau.edu</p>	
6. TA contact information	
<i>TA’s name</i> <i>Office address</i> <i>Office Hours</i> <i>Contact telephone number</i> <i>Email address</i>	N/A
7. Course description	
<p>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 course.</p> <p>Class Overview: Subject materials in this course will include the design process, as well as design projects of varying scales. The course will rely on a self-learning, as expected in the professional workforce. A design project developed by the students will be used to facilitate the practical implementation of the engineering design and design process.</p> <p>This course is intended to complete the student’s engineering education. Thus, upon completion of this course, the student must demonstrate:</p>	

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- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design systems, components, and processes to meet desired needs;
- an ability to function in multi-disciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering;
- the ability to understand the impact of engineering solutions in a global context; and
- a knowledge of contemporary issues.

The students will utilize design theory and supporting skills, such as the design process, systems engineering, project management, ethics and report writing. In parallel, students work in a hands-on sense to complete a design project. Every other week each group will give a presentation regarding the status and progress of the project.

Milestones:

Below are the tentative dates for the major milestones of the projects are

Date *	Topic
08/24, 29	Progress Presentation 1
08/31	Test Plan
10/17, 19	Mid-Term Presentation
10/26	Mid-Term Report
11/7, 9	Fabrication & Construction Presentation
11/28	Final Presentation
11/30	Final Report
TBD	Final Video
TBD	Showcase

**dates are subject to change. Submissions must be made by EOD.*

8. Course objectives/student learning outcomes/program outcomes

<i>Course objectives</i>	This course is designed to have the students work in a team environment to design an engineering system. It will foster creative thinking, diversified background exposure, teamwork, and communication and collaboration skills.
<i>Student learning outcomes & relationship to ABET 1-7 objectives</i>	<p>Student Learning Outcomes: (numbers in parentheses indicate correlation of the outcome with the appropriate program assessment outcomes 1-7)</p> <ol style="list-style-type: none"> 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. (3,4,5) 5. The students will recognize the need to engage in life-long professional development and learning. (4,7)

9. Course evaluation method

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Grading Policy

Important: The difficulty level of the project is a mutual agreement between the student and the advisors and once agreed on, it would not affect the grade.

Course Evaluation Method:

Oral/Presentation Skills (25 pts)

- Progress Presentations 5 pts
- Mid-Term Presentation 5 pts
- Final Presentation 10 pts
- Final Video/Showcase 5 pts

Written Communication (25 pts)

- Midterm Report 10 pts
- Final Project Report 15 pts

Fabrication and System Performance (25 pts)

- Test Plan 5 pts
- Fabrication and Construction 10 pts
- Performance 10 pts

Teamwork and Participation (25pts)

- Instructor Evaluation* 15 pts
- Attendance, participation 10 pts

* Instructor will consider team leader's and peer's feedback on his evaluation.

Additional Note on Peer & Instructor Evaluation Criteria

Each student will be evaluated based on his/her

- attendance at and constructive participation in group discussions
- contribution to a fair share of the workload
- quality of work done
- completing work on time
- willingness to volunteer/accept tasks that need to be accomplished
- ability to arrange personal schedules to fulfill commitments to the team

The students will work in a group, but each group separates the project with sub-tasks led by each group member, who has a specific role (leader, accountant, mechanical/electrical part leader, etc.). The work progress and performance for each individual member will be evaluated by the course instructor and peer students in written progress reports and oral presentations.

10. Course grading scale

Grading Scale:

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

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

Submission Deadline

Submission is ALWAYS due on or before the end of the due date (EOD).

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

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

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Late Submissions

Late work is not acceptable.

12. Research-Intensive (RI) Designated Course

- *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.

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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.
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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/

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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

No text book required.

20. Supplementary/recommended readings

Will be provided by the instructor.

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

Course Topics:

Topics:

1. Application of design process
2. Application creativity, and 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, environmental issues.
7. Technical standards and codes

Tentative schedule subject to change.

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11/28	Final Presentation
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