Department of Ocean and Mechanical Engineering
Florida Atlantic University
Course Syllabus

1. Course title/number, number of credit hours	
EML 4521C – ENGINEERING DESIGN	# of credit hours 3

2. Course prerequisites, corequisites, and where the course fits in the program of study

Prerequisites:

1. EML 4127 – Applied Thermal/Fluid Engineering
2. EML 4500 – Machine Design
3. EGM 4350 – Finite Element Analysis

All with a grade of C or above.

Corequisites:

1. EGM 4350 – Finite Element Analysis
2. EML 4263C – Fabrication of ME Systems
3. EML 4127 – Applied Thermal/Fluid Engineering
4. EML 4500 – Machine Design

3. Course logistics

Term: Fall 2020
This is a classroom lecture course
Class – T/TR: 11:00AM - 12:20PM LEC Location: Engineering West, EG 162

4. Instructor contact information

Instructor's name	Dr. Gary C. Salivar
Office address	Engineering West (EG-36), Room 113
Office Hours	
Contact telephone number	(561)297-3478
Email address	salivar@fau.edu

5. TA contact information

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

6. Course description

Course Description:
The design process, including decision theory, creativity concepts, human factors, optimization techniques, reliability, statistics and professional ethics. Engineering economy. Material selection and testing. Fatigue and fracture design.

7. Course objectives/student learning outcomes/program outcomes

Course objectives	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.
Student learning outcomes & relationship to ABET a-k objectives	Student Learning Outcomes: (letters in parentheses indicate correlation of the outcome with the appropriate program assessment outcomes a-k) 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)

8. Course evaluation method

Course Evaluation Method: Homework – 10% Presentations – 25% Project Proposal reports – 40% Final Examination – 25%	*Note*: The minimum grade required to pass the course is C.

9. Course grading scale

Grading Scale:

A 92.5-100	C+ 77.5-80	D- 60-62.5
A- 90-92.5	C 72.5-77.5	F <60
B+ 87.5-90	C- 70-72.5	
B 82.5-87.5	D+ 67.5-70	
B- 80-82.5	D 62.5-67.5	

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

11. Special course requirements

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12. 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 and laptops, are to be disabled in class sessions.

13. Disability policy statement

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation 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.

14. Honor code policy

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

15. 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/

16. Required texts/reading

Textbook:
Dieter, G. E. and Schmidt, L. C., Engineering Design, 5th Edition, McGraw-Hill, 2013.

17. Supplementary/recommended readings

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

Course Topics:

1. Design process
2. Creativity, and problem solving
3. Team building
4. Proposal preparation
5. Communication skills (report, proposal writing, oral presentation)
6. Project planning and management
7. Engineering ethics
8. Safety, hazard, environmental consideration
9. Engineering economics and marketability

Test Dates:

1. Exam: TBD
2. Final Presentation: TBD