

 <b>FLORIDA ATLANTIC UNIVERSITY</b>	<b>NEW COURSE PROPOSAL</b> <b>Undergraduate Programs</b>		UUPC Approval <u>4-26-21</u> UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	<b>Department</b> Ocean & Mechanical Engineering  <b>College</b> COECS (To obtain a course number, contact <a href="mailto:erudolph@fau.edu">erudolph@fau.edu</a> )		
<b>Prefix</b> EML  <b>Number</b> 4804	(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)  <b>Lab Code</b> <span style="background-color: yellow; border: 1px solid black; border-radius: 50%; padding: 2px;">C</span>	<b>Type of Course</b> <input type="text" value="Lecture/Lab"/>	<b>Course Title</b> Mechatronics
<b>Credits</b> (Review Provost Memorandum)  3	<b>Grading</b> (Select One Option)  <b>Regular</b> <input checked="" type="radio"/> <b>Pass/Fail</b> <input type="radio"/> <b>Sat/UnSat</b> <input type="radio"/>	<b>Course Description</b> (Syllabus must be attached; Syllabus Checklist recommended; see Guidelines) This course includes: Electronics, microcontrollers programming, microcontrollers interfacing, implementation of control algorithms on microcontrollers, lab experiments and projects.	
<b>Effective Date</b> (TERM & YEAR)  Fall 2021	<b>Prerequisites, with minimum grade*</b> EGM 2213 Computer Applications in ME 1 EGM4045 Electro/Mechanical Device		
		<b>Corequisites</b>	<b>Registration Controls</b> (Major, College, Level)
<i>*Default minimum passing grade is D-. Prereqs., Coreqs. &amp; Reg. Controls are enforced for all sections of course</i>			
<b>WAC/Gordon Rule Course</b>  <input type="radio"/> Yes <input checked="" type="radio"/> No  WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to proposal. See <a href="#">WAC Guidelines</a> .		<b>Intellectual Foundations Program (General Education) Requirement</b> (Select One Option)  None  General Education criteria must be indicated in the syllabus and approval attached to the proposal. See <a href="#">GE Guidelines</a> .	
<b>Minimum qualifications to teach course</b> Ph.D Degree in mechanical engineering and Equivalent			
<b>Faculty Contact/Email/Phone</b> Dr. O. Masory/masoryo@fau.edu, 297-3424		<b>List/Attach comments from departments affected by new course</b>	
<b>Approved by</b> Department Chair <u>Maurice C...</u> College Curriculum Chair <u>Daniel Meeroff</u> College Dean <u>Fred Bloetscher</u> UUPC Chair <u>Jerry Haky</u> Undergraduate Studies Dean <u>Edward Pratt</u> UFS President _____ Provost _____			<b>Date</b> <u>4-2-21</u> <u>4-15-21</u> <u>4-15-21</u> <u>4-26-21</u> <u>4-26-21</u> _____ _____

Email this form and syllabus to [mjenning@fau.edu](mailto:mjenning@fau.edu) seven business days before the UUPC meeting.

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

<b>1. Course title/number, number of credit hours</b>	
EML 4804C Mechatronics	3 credit hours
<b>2. Instructional Method</b>	
<p>This class consists of lectures which will be conducted in-person or live using WebEx or Zoom, and recorded so students can watch the lectures at a later time and date. . Students will be accommodated as much as possible with their needs during the pandemic.</p> <p><b><u>You will need to have a computer (or laptop), a reliable WIFI access, and a webcam and micro-phone connected to your computer for this course.</u></b></p> <p>In the event you might not have a computer, there is a Laptop Loaner Program at FAU for first-generation, low-income students.  <a href="https://www.fau.edu/newsdesk/articles/fau-announces-laptop-loaner-program.php">https://www.fau.edu/newsdesk/articles/fau-announces-laptop-loaner-program.php</a></p> <p>In the event you might not have reliable internet access remotely, you may use the internet connection on campus. There will be no physical participation in classes, labs. Quizzes and exams will be conducted online . Note that there are only reduced seating capacities in the classroom, and only those who do not have reliable internet access should use the classroom. Social distancing must be strictly followed in the classroom at all times. You will need to make reservation for your seating every week on Canvas. The instructions for the reservation are provided at the following link:  <a href="https://fau.edu/oit/instructional/support/files/seatReservationTool_student.pdf">https://fau.edu/oit/instructional/support/files/seatReservationTool_student.pdf</a></p>	
<b>3. COVID 19 Statement</b>	
<p>All students in face-to-face classes are required to wear masks during class, and students must sanitize their own workstations upon entering the classroom. Taking these measures supports the safety and protection of the FAU community. Students who do not adhere to these rules will be asked to leave the classroom and/or be removed from the course. Students experiencing flu-like symptoms (fever, cough, shortness of breath), or students who have come in contact with an infected person should immediately contact FAU Student Health Services (561-297-3512).</p>	
<b>4. Course pre-requisites, co-requisites, and where the course fits in the program of study</b>	
<p><b><u>List Prerequisites, Co-requisites:</u></b></p> <p>EGM 2213 Computer Applications in ME I  EGM 4045 Electro Mechanical Devices</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>	
<b>5. Course logistics</b>	
<p><i>Term: Summer 2021</i>  <i>Lectures: TR 8:00-9:20 ,Taping + zoom</i>  Phil Smith Hall 101</p>	
<b>6. Instructor contact information</b>	
<i>Instructor's name</i>	Oren Masory
<i>Office address</i>	Bldg 36 (EW) room 112
<i>Office Hours</i>	M 10:00-12:00
<i>Contact telephone number</i>	561 - 297-3424
<i>Email address</i>	<a href="mailto:masoryo@fau.edu">masoryo@fau.edu</a>

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<b>7. TA contact information</b>	
<i>TA's name</i> <i>Office address</i> <i>Office Hours</i> <i>Contact telephone number</i> <i>Email address</i>	
<b>8. Course description</b>	
An introduction to mechatronics the course includes: Electronics, microcontrollers programming, microcontrollers interfacing, implementation of control algorithms on microcontrollers, lab experiments and projects.	
<b>9. Course objectives/student learning outcomes/program outcomes</b>	
<i>Course objectives</i>	<ol style="list-style-type: none"> <li>I. Introduce students to microcontrollers and their applications</li> <li>II. Teach student ways to interface microcontrollers to applications</li> <li>III. Introduce control algorithms</li> <li>IV. Have student working in the lab on assignments and projects.</li> </ol>
<i>Student learning outcomes &amp; 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"> <li>1. Students should be able to implement simple automation solutions (1)</li> <li>2. Students should be able to function in teams (5)</li> <li>3. Students should be able to develop and conduct appropriate experiments(6)</li> </ol>
<b>10. Course evaluation method</b>	
<p>Homework – 30%</p> <p>Midterm – 20%</p> <p>Final Examination – 20%</p> <p>Project - 20%</p>	
<b>11. Course grading scale</b>	
<p>93 and above: "A",</p> <p>90-92: "A-",</p> <p>87-89: "B+",</p> <p>83-86: "B",</p> <p>80-82: "B-",</p> <p>77-79: "C+",</p> <p>73-76: "C",</p> <p>70-72: "C-",</p> <p>67-69: "D+",</p> <p>63-66: "D",</p> <p>60-62: "D-",</p> <p>59 and below: "F."</p>	
<b>12. Policy on makeup tests, late work, and incompletes</b>	
<p><i>Makeup tests</i> are given only if there is solid evidence of a medical or otherwise serious emergency before the tests that prevented the student of participating in the exam. Makeup exams should be administered and proctored by department personnel unless there are other pre-approved arrangements.</p> <p><b><i>Late work</i> without verifiable justification will NOT be graded.</b></p>	

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*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.

**13. Special course requirements**

**14. 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.

1. No cell-phones, i-pads, or other electronic devices are allowed during any exams or quizzes.
2. No watches capable of taking picture or communication with others are allowed during the exam.
3. In case of an emergency where you need to carry an electronic device to the exam, you must ask for permission from the instructor.
4. Only simple calculators can be used.

Violation of any of the above exam rules will, at a minimum, result in receiving a zero on the exam.

**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/](http://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/>

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**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](http://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**

Arduino reference ( free on the WEB)

**20. Supplementary/recommended readings**

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

Course Topics:

1. Electronics
2. Microcontrollers programming
3. Microcontrollers interfacing
4. Control of discrete devices
5. Motion and process control
6. Project

Lab Activity

1. Programming
2. Interfacing to discrete sensors
3. Interfacing to analog sensors
4. Control of discrete devices
5. Control of motion and processes