

EMA4914 - Research Mat Sci 2

EMA 4914 Research in Materials Science and Engineering II

Class #: 12586

Section: RSCH

Course periods: N/A

Location: N/A

Academic term: Spring 2024

Instructor:

Jack Mecholsky

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206 Rhines Hall

(352) 846-3306

Office hours: 11-11:40 AM M-F.

Course Description

Continuation of EMA 4913: short research problems in materials science and engineering, usually including a final thesis.

Course Pre-Requisites

Senior-level standing

Course Objectives

Students completing this course should have the basic skills and experience to be a valuable employee. These skills and knowledge will be gained through laboratory research continuing from what was done previously in EMA 4913.

Relation to Program Outcomes (ABET):

Outcome	Coverage
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	Medium
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.	High

3. An ability to communicate effectively with a range of audiences.	High
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	High
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	Low
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	High
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	High

Required Textbooks and Software

Required Textbook

None

Recommended Textbooks

None

Required Software

None

Course Schedule

You must meet with your research advisor in the two weeks of class to establish a regular research and meeting schedule. You need to keep to that schedule throughout the semester.

Course Policies

Course format

The format will depend on the project assigned to you by your research adviser. Some projects will be able to be completed remotely, while other projects will require campus access.

Course Communication

E-Learning will be the primary avenue for communication and course management. All announcements for the course will be made using the announcement system on the E-Learning site. Course lecture slides will be posted on E-Learning before each lecture.

Course Time Commitment

This course is a three-credit class. It is treated like a lab course and therefore you should be working on your research for **at least an average of ten hours a week.**

Assignments

There will be various assignments during the semester. They will focus on various aspects of your research this semester, including planning at the beginning of the semester and reporting your results at the end of the semester. These assignments will be worth 20% of your grade.

Final Report and Research Summary Presentation: Near the end of the semester, you will submit a final report summarizing your research findings. You will also record a 3 to 5 minute video summarizing your primary research findings.

Research Updates

You will submit a weekly update on your work, starting the week of January 23. You will report if you met with your research advisor/supervisor and how many hours you worked on research that week. You will be given full credit for filling out these updates, and they will be worth 5% of your grade.

Research Grade

75% of your grade will be determined by your research advisor. They will grade you on your research quality, your final report, and your research summary presentation.

Grade Appeal

100% of your grade for this course will be based on your participation in the course and your completion of the course assignments. 50% of your grade for this course will be determined by your research adviser. To appeal any course grades, please contact Dr. Mecholsky before 1/25. To appeal your research grade, contact Dr. Mecholsky before the end of finals week.

Grading Scheme

Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Score	>93	>90	>87	>83	>80	>77	>73	>70	>67	>63	>60	<60

Note that the score listed on the table for each grade is the lower bound for that grade.

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/> (Links to an external site.). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. (Links to an external site.) Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/> (Links to an external site.). Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/> (Links to an external site.).

In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted

for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Conduct Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) ([Links to an external site.](#)) specifies a number of behaviors that are in violation of this code and the possible sanctions. If you have any questions or concerns, please consult with the instructor or TA in this class.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- The Academic Services Office, advising@mse.ufl.edu
- Jennifer Nappo, Director of Human Resources, 352-392-0904, jpennacc@ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html> ([Links to an external site.](#)) ([Links to an external site.](#))

Campus Resources:

Health and Wellness

U Matter, We Care:

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center:

<https://counseling.ufl.edu> (Links to an external site.), and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the [Office of Title IX Compliance \(Links to an external site.\)](#), located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu.

Sexual Assault Recovery Services (SARS):

Student Health Care Center, 392-1161.

University Police Department:

392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/> (Links to an external site.).

COVID-19

COVID-19

- You are expected to wear approved face coverings at all times during class and within buildings even if you are vaccinated.
- If you are sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus.
- If you are withheld from campus by the Department of Health through Screen, Test & Protect, you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.
- UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive

yourself. Visit the [UF Health Screen, Test & Protect website \(Links to an external site.\)](#) for more information.

- Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.

Academic Resources

E-learning technical support

352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml> (Links to an external site.).

Career Resource Center

Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/> (Links to an external site.).

Library Support

<http://cms.uflib.ufl.edu/ask> (Links to an external site.). There are various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center

Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <https://teachingcenter.ufl.edu/> (Links to an external site.).

Writing Studio

302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/> (Links to an external site.).

Student Complaints

<http://www.distance.ufl.edu/student-complaint-process>

Course Summary:

Date	Details
Fri Jan 12, 2024	Quiz Email to your research advisor
Tue Jan 16, 2024	Quiz Response from your research advisor
Fri Jan 19, 2024	Assignment Spring Research Plan
Mon Jan 22, 2024	Quiz Week 3 Research Update

Date	Details
Mon Jan 29, 2024	Quiz Week 4 Research Update
Mon Feb 5, 2024	Quiz Week 5 Research Update
Mon Feb 12, 2024	Quiz Week 6 Research Update
Mon Feb 19, 2024	Quiz Week 7 Research Update
Mon Feb 26, 2024	Quiz Week 8 Research Update
Mon Mar 4, 2024	Quiz Week 9 Research Update
Mon Mar 18, 2024	Quiz Week 11 Research Update
Mon Mar 25, 2024	Quiz Week 12 Research Update
Mon Apr 1, 2024	Quiz Week 13 Research Update
Mon Apr 8, 2024	Quiz Week 14 Research Update
Mon Apr 15, 2024	Quiz Week 15 Research Update
Mo nApr 22, 2024	Quiz Week 16 Research Update
	Assignment Final Research Report
	Assignment Research Summary Presentation
Wed Apr 24, 2024	Quiz Senior Research Evaluation
	Assignment Research Evaluation

