

## EMA 5095: Critical Analysis of Research in Materials Science & Engineering

1. Catalog Description (3 credit hours) – Critical methods for reviewing technical papers, for writing effective technical papers, and for developing meaningful research projects, in the field of materials science and engineering.
2. Co-requisite: EMA 6313 or equivalent.
3. Course Objectives : At the end of this course the student should be able to perform an effective online search of a technical topic, review technical journal papers in a critical manner and be able to distinguish properly presented data from poorly obtained data. The student should also be able to formulate critical questions regarding his/her own research topic so as to be able to create a research project to answer posed questions. The student will be able to identify cases of unethical writing or practice as well as the determination of the authors underlying purpose in writing the paper. The student will also become effective in present his/her work in both oral and written form.
4. Instructor: Professor J. J. Mecholsky, Jr.
  - a. **237A Rhines Hall**
  - b. Telephone: 352 846 3306
  - c. jmech@mse.ufl.edu
  - d. Sakai : lss.at.ufl.edu
  - e. Office hours by appointment
5. Teaching Assistant – TBA
  - a. Office location
  - b. Telephone
  - c. E-mail address
  - d. Office hours
6. Meeting Times : T – 4<sup>th</sup> (10:40-11:30AM); R- 5<sup>th</sup> and 6<sup>th</sup> (11:45AM-1:40PM)
7. Class schedule, 3- 50 minute classes per week
8. Meeting Locations: CSE E 122
9. Material and Supply Fees – none
10. Textbooks and Software Required - none
11. Recommended Reading: Assigned papers selected from technical journals in the field of materials science and engineering.
12. Course Outline

Week 1-2	Effective technical paper dissection tools and methods
Week 3-4	Selecting research topics/online database search
Week 5-6	Student designed research presentations
Week 7-9	Rhetorical Analysis and Ethical treatment of Data

- Week 10-12 Effective research paper writing  
 Week 13-14 Student and Group Technical Presentations  
 Week 15 Final Examination

13. Attendance and Expectations: Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

14. Grading – Quizzes – 10%, Exams – 50%, Homework – 15%, Proposal – 25%

15. Grading Scale Percentage

≥92	≥88	≥84	≥80	≥76	≥72	≥68	≥65	≥62	≥59	≥56	<56
A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

“Undergraduate students, in order to graduate, must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. Graduate students, in order to graduate, must have an overall GPA of 3.0 or better (B or better). Note: a B- average is equivalent to a GPA of 2.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

16. Make-up Exam Policy: Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

17. Honesty Policy – All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

Note that failure to comply with this commitment will result in disciplinary action compliant with the UF Student Honor Code Procedures. See <http://www.dso.ufl.edu/sccr/procedures/honorcode.php>

18. Accommodation for Students with Disabilities – Students Requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

19. UF Counseling Services –Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
- Career Resource Center, Reitz Union, 392-1601, career and job search services.

20. Software Use – All faculty, staff and student 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.

