

**EMA 3010 Section 1999**  
*Introduction to Materials Science and Engineering*  
**Fall 2014 Syllabus**

1. Catalogue Description: Conceptual perspective for origin of materials behavior - structure/property/performance interrelationships. Materials selection and use of familiar material - metals, ceramics, polymers, electronic materials and composites in electronics, structural and other engineering applications.
2. Prerequisite: *CHM 2045 (sequence)*
3. Course Objectives: To gain an understanding of the relationships between the structure, properties, processing, and applications of metallic, ceramic, polymeric and electronic materials.
4. Contribution of course to meeting the professional component: This course provides 3 credits towards Engineering Sciences. It is required of all MSE students and of several other engineering disciplines.
5. Relationship of course to program outcomes:
  - Ability to apply knowledge of mathematics, science, and engineering to materials systems.
  - Ability to identify, formulate, and solve engineering problems.
  - Understanding of the global, societal, and environmental impact of engineering solutions, including safety, the environment, the global economy, and intellectual property.

6. Instructor:

- a. Dr. Scott Perry
- b. Office: Rhines 206
- c. Phn: 846-3333
- d. E-Mail: [ssp@ufl.edu](mailto:ssp@ufl.edu)
- e. Course website: <https://lss.at.ufl.edu/> (login with student id)
- f. Office Hours: M, 10-11 am Other times by appointment.

7. Teaching Asst.:	Catherine Sahi	Jessi Rex	Drew Antony
Class day:	Friday	Wednesday	Monday
Office Hour:	Thursday 9-10 am	Wednesday 3-4 pm	Tuesday 2-3 pm
Contact:	<a href="mailto:csahi@ufl.edu">csahi@ufl.edu</a>	<a href="mailto:jessirex@ufl.edu">jessirex@ufl.edu</a>	<a href="mailto:aanton1@ufl.edu">aanton1@ufl.edu</a>

8. Meeting Time: MWF: Period 7, 1:55-2:45 pm
9. Class schedule: 50 minute lectures, three times weekly (NOTE: Evening Assembly Exams)
10. Location: Weimer 1064
11. Material and Supply Fee: N/A
12. Text: *Fundamentals of Materials Science and Engineering: An Integrated Approach, 4/e*  
 William Callister, Jr.; Copyright 2008, Wiley ([www.wiley.com](http://www.wiley.com)); ISBN **9781118061602**
13. Recommended reading: Covered sections (see outline below).

14. Course Schedule

Aug 25	Chapter 1	Oct 6	Chapter 7
Aug 27	Chapter 2	Oct 8	Chapter 7
Aug 29	Diagnostic Exam (optional)	Oct 10	Chapter 8
Sept 3,5	Chapter 2	Oct 13	Chapter 8
Sept 8	Chapter 3	Oct 15	Chapter 9
Sept 10	Chapter 3	Oct 17	<i>UF Homecoming Holiday</i>
Sept 12	Chapter 3	Oct 20	Chapter 9
Sept 15	Chapter 4	Oct 22	Exam 2 Review (in class)
Sept 17	Chapter 4	<b>Oct 23</b>	<b>Exam 2 (Chap. 7-9) 8:20 pm</b>
Sept 19	Chapter 5	Oct 24	Chapter 10
Sept 22	Chapter 5	Oct 27	Chapter 10
Sept 24	Exam 1 Review (in class)	Oct 29	Chapter 10
<b>Sept 25</b>	<b>Exam 1 (Chap. 1-5) 8:20 pm</b>	Oct 31	Chapter 10
Sept 26,29	Chapter 6	Nov 3	Chapter 12
Oct 1	Chapter 6	Nov 5	Chapter 12
Oct 3	Chapter 6	Nov 7	Chapter 14

Nov 10	Chapter 14	Dec 1	Chapter 18
Nov 12	Chapter 15	Dec 3	Chapter 18
Nov 14	Chapter 15	Dec 5	Chapter 19
Nov 17	Chapter 16	Dec 8	Chapter 19
Nov 19	Chapter 16	Dec 10	Exam 3 Review (in class)
Nov 21	Chapter 17	<b>Dec 10</b>	<b>Exam 3 (Chp. 10, 12, 14-19) 8:20 pm</b>
Nov 24	Chapter 17	Dec 17	Diagnostic Exam (optional)

Chapter 1. Introduction	Chapter 10. Phase Diagrams
Chapter 2. Atomic Structure and Interatomic Bonding	Chapter 12. Electrical Properties
Chapter 3. Structures of Metals and Ceramics	Chapter 14. Synthesis, Fabrication, and Processing
Chapter 4. Polymer Structures	Chapter 15. Composites
Chapter 5. Imperfections in Solids	Chapter 16. Corrosion and Degradation of Materials
Chapter 6. Diffusion	Chapter 17. Thermal Properties
Chapter 7. Mechanical Properties	Chapter 18. Magnetic Properties
Chapter 8. Deformation and Strengthening Mechanisms	Chapter 19. Optical Properties
Chapter 9. Failure	

15. Attendance and Expectations:

- Lecture attendance is recommended. While attendance is not mandatory, experience has shown that those who attend lectures earn higher grades in the course; arrival on time is expected.
- Please turn off all cell phones upon entering class.

16. Grading:

- The class grading system will be based upon weekly homework (10%), and three exams (30% each). Exams will be administered on the dates listed above.
- Examinations will be multiple choice.
- Grades are not curved. Students have two weeks after results are posted to resolve questions about scores. No changes after that.

17. Grading Scale: Final grades will be assigned according to the following scale: Less than 60 = E; 60-62.99 = D; 63-65.99 = D+; 66-69.99=C-; 70-73.99 = C; 74-77.99 = C+; 78-81.99=B-; 82-85.99 = B; 86-88.99 = B+; 89-91.99= A-; 92-100=A.

18. Make-up Exam Policy

Make-up exams will be provided only with the **prior approval of the instructor or excused absence**. In general, acceptable reasons for excused absence include illness, serious family emergencies, special curricular requirements, military obligation, court-imposed legal obligations, religious holidays and participation in official university activities such as music performances, athletic competition or debate.

19. 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.
20. 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.
21. UF Counseling Services –Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:
22. UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
23. Career Resource Center, Reitz Union, 392-1601, career and job search services.
24. 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.