

EMA 4061L Biomaterials Laboratory

1. **Catalog Description:** Hands-on laboratory experience in the processing and characterization of biomaterials for use in medical applications. (1 credit)
2. **Pre-requisites and Co-requisites:** Co-requisite EMA4061
3. **Course Objectives:** To investigate the structure, properties, and applications of metal, polymer, and ceramic based biomaterials. To understand the structure-property-performance in design and function of biomaterial devices.
4. Contribution of course to meeting the professional component (ABET only – undergraduate course): Not applicable
5. Relationship of course to program outcomes: Skills student will develop in this course (ABET only – undergraduate course): Not applicable
6. **Instructor:** Dr. Shema Freeman
Office Location: 135 Rhines Hall
Telephone: (352) 256 – 4025
Email address: sfree@ufl.edu
Class Website: see Canvas
Office Hours: TBD
7. **Teaching Assistant:** Bryan James
Office Location:
Telephone:
Email address: bryan.james@ufl.edu
Office Hours: TBD
8. **Meeting Time(s):** Tuesday Periods 6-8
9. **Class/laboratory schedule:** Class meets 3 consecutive periods weekly.
10. **Meeting Location:** Rhines B06
11. **Material and Supply Fee:** \$80
12. **Textbooks and Software Required:** None
13. **Recommended Reading:**
Title: Biomaterials Science: An introduction to materials in medicine
Authors: Ratner, Hoffman, Schoen, Lemons
Publication date and edition: 2013 (3rd edition)
ISBN number: 978-0-08-087780-8 (electronic bk.)

UF ONLINE See Link to Connect -- R857.M3B56 2013

- Access this e-book through the Knovel platform - <https://app.knovel.com/hotlink/toc/id:kpBSAIMM06/biomaterials-science/biomaterials-science>
- IMPORTANT: If you are off-campus, first login to the UF VPN to ensure your access
- Create a Knovel account to use advanced features like making and saving highlights/notes in the e-book.
- Save this e-book to your My Knovel for easier repeated access.
- If you use Pop-up Blockers in your browser, add app.knovel.com to your safe list so you can print from the e-book

14. **Course Outline** (tentative 8/21/2018):

Week(s)	Topic
1	Laboratory Safety and Hazardous Waste
2	Working in the Lab
3-4	Biometals
5-6	Biopolymers
7-8	Bioceramics
9-10	Cell Culture
11-14	Design Project

15. **Attendance and Expectations:**

- **Policy on Class Attendance:** Attendance is **strongly** suggested since significant amount of participative as well as individual and collaborative work will be performed during the class sessions and will be worth as much as 20% of the course points.
- **Policy on General Behavior, Cell Phones, and Laptops:** Proper behavior in class is always important and leads to a relaxed and productive educational environment. Thus, **eating, drinking, texting, reading of newspapers, working on homework for this or other courses, or other activities that are not part of the class are not allowed. Students who do not comply with these requirements or who behave disorderly or disrespectfully WILL be asked to leave the classroom.** Leaving your cell phone on, leaving early or arriving late can be VERY distracting, you should avoid it. All electronic devices (laptops, cell-phones, etc.) should be turned off or in silent mode. Use of smartphones, laptops, tablets or similar personal computers is not allowed unless explicitly requested by the individual student the first day of class and for note taking purposes only. No audio/video recording is allowed with express permission of lecturer.

- **Policy on Excused Absences:** Excused absences are consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation.

16. Grading:

Lab Notebook	15%
Skills Assessment	10%
Student Written Products	50%
<u>Design Project</u>	<u>25%</u>
Total	100%

- 17. Grading Scale:** Grades are not curved, but points are occasionally added to everyone's score if a problem is deemed to have been too difficult or unfair. When determining the final grade, the final point value score will be rounded up for values of 0.5 and above.

Percent	Grade
92 – 100	A
88 – 91.9	A-
84 – 87.9	B+
80 – 83.9	B
76 – 79.9	B-
72 – 75.9	C+
68 – 71.9	C
65 – 67.9	C-
62 – 64.9	D+
59 – 61.9	D
56 – 58.9	D-
0 – 55.9	E

A C- will not be a qualifying grade for critical tracking courses. In order to graduate, students 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. For more information on grades and grading policies, please visit:

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

- 18. 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>

19. **Honesty Policy:** UF students are bound by The Honor Pledge that 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 Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class. 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>
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:
- UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, <http://www.counseling.ufl.edu/cwc/Default.aspx>, counseling services and mental health services.
 - Career Resource Center, Reitz Union, 392-1601, career and job search services.
 - University Police Department 392-1111
22. **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.
23. **Students are expected to provide feedback on the quality of instruction** in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Campus Resources:

Health and Wellness

U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or (352) 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS): Student Health Care Center, 392-1161.

University Police Department: 392-1111 (or 99-1-1 for emergencies), or <http://www.police.ufl.edu/>

Academic Resources

E-learning technical support: (352) 392-4357 (select option 2) or e-mail to Learningsupport@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.

Career Resource Center: Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

Library Support: <http://cms.uflib.ufl.edu/ask>. 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/>.

Writing Studio: 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus:

https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaintprocess>.