

Introduction to Biomedical Engineering

BME 1008 Section 9576

Class Periods: Friday, Period 5, 11:45 AM

Location: Weimer Hall, room 1064

Academic Term: Fall 2017

Instructor:

Stephen Hugo Arce, Ph.D.

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(352) 392 - 0228

Office Hours: By appointment, NSC 407

Teaching Assistants:

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Course Description

(1 credit hour) - Introduction to and overview of biomedical engineering. Lectures are given by faculty experts in a range of biomedical engineering fields. The goal is to give beginning students an appreciation for the breadth of the field and to guide them in making curriculum, major and career choices.

Course Pre-Requisites / Co-Requisites - None

Course Objectives

- Provide students with a broad overview of the Biomedical Engineering field
- Guide students in making early curriculum, major, and education choices regarding biomedical engineering
- Provide an overview of common areas available to BME graduates
- Provide students with knowledge of contemporary issues in BME

Materials and Supply Fees - None

Professional Component (ABET):

- The student will learn about professional and ethical responsibility
- The student will learn to communicate effectively
- The student will learn about contemporary BME research
- The student will learn to use the techniques, skills, and modern biomedical engineering tools necessary for biomedical engineering practice

Relation to Program Outcomes (ABET):

Outcome	Coverage*
a. Apply knowledge	
b. Conduct experiments	
c. Design	Low
d. Function on teams	
e. Solve problems	Low
f. Professional and ethical responsibility	Medium
g. Communicate	High
h. Global, societal, and environmental impact	Medium
i. Lifelong learning	Medium
j. Contemporary issues	High
k. Techniques, skills, and tools for degree program	Low

*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not part of the course.

Required Textbooks and Software - None

Recommended Materials

The following websites provide a nice overview of the BME field and current events:

1. bme.ufl.edu (Information on our faculty, research, and laboratories)
2. undergraduate.bme.ufl.edu (Information on the undergraduate UF BME curriculum)
3. <http://www.bmes.org> (Check out the undergraduate research section for career connections, news and press, and other resources)
4. www.whitaker.org (Check out undergraduate research programs and summer programs)
5. www.nibib.nih.gov (Information on recent advances in Biomedical Engineering and government funding in BME).
6. www.embs.org (Information on the IEEE Engineering in Medicine and Biology Society)
7. http://www.crc.ufl.edu/assets/files/events/UFCRC_SpringEvents2016.pdf (Career Resource Center Event Schedule)

Course Schedule - **LECTURE SCHEDULE SUBJECT TO CHANGE**

Week 1:	Dr. Wesley Bolch (Medical Physics)
Week 2:	Dr. Andrew Maurer (Neuroscience)
Week 3:	Dr. Kyle Allen (BME Curriculum)
Week 4:	Dr. Christine Schmidt (Regenerative Biomaterials)
Week 5:	Dr. Angelos Barmoutis (Digital Worlds Institute)
Week 6:	Dr. Mingzhou Ding (Cognitive Neuroscience)
Week 7:	Dr. Greg Hudalla (Therapeutic Nanomaterials)
Week 8:	[Design Day] Dr. Stephen Hugo Arce
Week 9:	Dr. Walter O'Dell (Radiology)
Week 10:	Dr. Kevin Otto (Neural Engineering)
Week 11:	Dr. Carlos Rinaldi (Nanomedicine and Magnetic Biomaterials)
Week 12:	Dr. Karim Oweiss (Brain-Machine Interfaces)
Week 13:	Dr. Yong Huang (3-D Bioprinting)
Week 14:	Dr. Cherie Stabler (Regenerative Medicine and Diabetes)

Attendance Policy, Class Expectations, and Make-Up Policy

Attendance is required and will make up a substantial part of your final grade. Every lecture will have a sign-in sheet that you must sign with your initials. Don't forget to sign the sheet because you will not receive credit without signing the sheet. If you are disruptive to the class, fall asleep, use your computer or phone or do crossword puzzles during class, attendance credit will be deducted.

Common Issues:

- **Do not sign in for your friends.** Your handwriting will be checked.
- Valid reasons for missing class include: sickness (requires doctor's certificate); death in the family.
- From the registrar's office - Final exams are determined by course meeting times, except for certain large courses. No student is required to take more than three final exams in one day. If two exams are scheduled at the same time, assembly exams take priority over time-of-class exams. When two assembly exams or two time-of-class exams conflict, the course with the higher number will take priority. Instructors giving make-up exams will make the necessary adjustments.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Attendance	Sign-in each class	35%
Design Problem	10 points	25%
Assignments (2 Homeworks)	10 points each	40%
		100%

Grading Policy

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. 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/>.

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 Honor Code (<https://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.

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:
<http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

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 at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@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-complaint-process>.