

Introduction to Biomolecular Engineering

BME 3406 Class Number 24767

Class Periods: MWF: Period 2 (8:30 am – 9:20 am)

Location: LAR 0310

Academic Term: Spring 2020

Instructor:

Dr. Yiider Tseng

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Office Phone Number: (352) 392-0862

Office Location: CHE 223

Office Hours: MW 9:30 am – 10:30 am or by appointment through email

Course Description

This is a 3-credit introductory course for the engineering students to develop their career in a bio-related field. The contents of the course emphasize the connections between biology and chemical engineering.

Course Pre-Requisites / Co-Requisites

ABE 2062 (or equivalent course)

Course Objectives

This is an era that an engineer can greatly apply their solid engineering discipline to much broader area, such as energy and biomedicine. From the broad scheme, this course aims to give students an opportunity to expand their career paths to a bio-related field. More specifically, this course will introduce basic biomolecular engineering concept to students and help them to identify whether biomolecular engineering area is a suitable field for them. Students enrolled to this class expect to learn the process and characterizations of biomolecules.

Materials and Supply Fees

None

Professional Component (ABET):

None

Relation to Program Outcomes:

This course is to design to have the following outcomes (B.S. program objectives) – When finishing this course, the students shall attain techniques to help **a)** problem solving and **g)** life learning, necessary to understand the impact of engineering solutions in a global and societal context.

Required Textbooks and Software

The instructor will post notes to the Canvas website before every classes for the students to download. The students are encouraged to actively acquire more related information from different sources, including Internet.

Recommended Materials

The following book serves as a reference for the students to review basic knowledge from topics covered by the courses.

- a. Title: *Campbell Biology* (Pearson/Benjamin Cummings Publisher)
- b. Authors: Reece, Urry, Cain, Wasserman, Minorsky and Jackson
- c. Publication date and edition: 2011 as 9th Edition
- d. ISBN number: ISBN-13: 9780321558237 or ISBN-10: 0321558235

Course Schedule

Section 0	Course introduction
Section 1	Biomolecules
Section 2	Biomolecular Manufacture
Section 3	Biomolecular Purification
Section 4	Biomolecular Characterization and Optimization
Section 5	Case studies and business plan proposals

Attendance Policy, Class Expectations, and Make-Up Policy

Students are expected to attend the classes. Absence from the lectures will lead to poor performance in exams. The student is required to report a special event that causes absence of the individual prior the class by email. Unless for the workshop, the using of cellular phone and laptop are not allowed in class. The homework announcement will be through both Canvas and email, please pay attention to the announcement. The makeup exam only allows from the instructor's approval before the formal exam time. 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.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Homework/Quizzes	100 each	30%
Midterm Exam	100	40%
Final Projects	100	30%
		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>.