

## **Introduction to Biomolecular Engineering**

BME 3406 Section 083F

**Class Periods:** T: Period 5 (11:45 am – 12:35 pm) and R Period 4-5 period (10:40 am – 12:35 pm)

**Location:** WEIM 1084

**Academic Term:** Spring 2017

### ***Instructor:***

Dr. Yiider Tseng

Email Address: [ytseng@ufl.edu](mailto:ytseng@ufl.edu)

Office Phone Number: (352) 392-0862

Office Location: CHE 223

Office Hours: W (1:30 pm – 2:30 pm) and R (1:30 pm – 2:30 pm)

**Teaching Assistants:** (Please contact through the Canvas website)

Mr. Ryan Montes

Email address: [ryanjmontes@ufl.edu](mailto:ryanjmontes@ufl.edu)

Office location: CHE 416

Office hours: R (2:00 – 4:00 pm)

### ***Course Description***

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

### ***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 training to much broader area, such as biomedical field. From the broad scheme, this course aims to give students an opportunity to expand their discipline to bio-X fields. More specifically, this course introduces basic biomolecular engineering concept to students and help them to identify whether biomolecular engineering a suitable field for them to develop their career paths. 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:***

Relationship of course to program outcomes (B.S. program objectives) – When finishing this course, the students shall attain **a)** to instill technical competence in mathematics, science, and/or engineering; **c)** to develop an ability to apply knowledge to practice; **d)** to instill an ability to design a component, unit, or process that meets performance specifications; **e)** to develop an ability to design and to conduct experiments, as well as to analyze and interpret the data; **f)** to instill an ability to use the techniques, skills, and modern engineering tools necessary for chemical engineering practice; **g)** to develop communication skills; and **j)** to provide opportunities to obtain the broad background, including contemporary issues, necessary to understand the impact of engineering solutions in a global and societal context.

### **Required Textbooks and Software**

The instructor will post class notes to the Canvas website before every classes. The students can download these materials offered by the class and are encouraged to actively acquire more information from different sources for related materials taught in the classes.

### **Recommended Materials**

- 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

### **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**

<b>Assignment</b>	<b>Total Points</b>	<b>Percentage of Final Grade</b>
Homework/Quizzes	100 each	25%
Midterm Exam	100	25%
Final Exam	100	25%
Project	100	25%
		100%

### **Grading Policy**

<b>Percent</b>	<b>Grade</b>	<b>Grade Points</b>
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](mailto: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/>.

**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](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf).

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