

1. Catalog Description – This is a 3-credit introductory course of biology for a student in the engineering discipline. The contents of the course, including the basic knowledge of biological functions of human at the organ/tissue, cellular and molecular level, is designed for preparing students to have the opportunity to develop their engineering career in a bio-related field.
2. Pre-requisites and Co-requisites – There are no pre-requisites and co-requisites for this course.
3. Course Objectives – This course aims to enable students to use an engineer’s point of view to understand basic biological concepts.
4. Contribution of course to meeting the professional component – This is an era that Engineers can apply their solid engineering training to much broader area, such as biomedical field, greatly. The course tries to expand the students’ discipline to enable students to apply the chemical engineering principles to biological and biomedical field.
5. Relationship of course to program outcomes – When finishing this course, the students will attain **1)** a knowledge of contemporary biological issues, **2)** the broad education necessary to understand the impact of engineering solution in current biological and biomedical research; and **3)** an ability to combine engineering and biological knowledge together to their career development.
6. Instructor: Yiider Tseng, PhD, Associate Professor of Chemical Engineering
 - a. Office location: 223 CHE (Chemical Engineering Building)
 - b. Telephone: (352) 392-0862
 - c. E-mail address: ytseng@ufl.edu
 - d. Web site: <http://www.che.ufl.edu/faculty/tseng/index.html>
 - e. Office hours: TR Period 3 (9:40 am – 10:30 am), or special appointment by email
7. Teaching Assistant: Rob Damitz, PhD graduate student of Chemical Engineering
 - a. Office location: 419A ChE (Chemical Engineering) Building
 - b. E-mail address: rdamitz@ufl.edu
 - c. Office hours: Tuesday 11:30 am - 12:30 pm and Thursday 10:30 am - 11:30 am.
8. Meeting Times – This class will meet two times a week.
9. Class schedule: Tuesday at Period 6 (12:50 pm - 1:40 pm) and Thursday at Period 5 (11:45 am - 12:35 pm) and Period 6.
10. Meeting Location: Tuesday in Room 1002, NPB (New Physics Building) and Thursday in Room 0202, NEB (New Engineering Building).
11. Material and Supply Fees: Not applicable
12. Textbooks and Software Required
 - 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
13. Recommended Reading – Students are encouraged to actively acquire information from the Internet for related materials taught in the classes.

14. Course Outline (TENTATIVE):

Schedule and Contents		
Wk	Date	Topics
1	Jan. 8 Jan. 10	Introduction Materials Balance: Chapter 40, 41
2	Jan. 15 Jan. 17	Chapter 42 Chapter 42, 44
3	Jan. 22 Jan. 24	Cells and Biomolecules: Chapters 2 – 6 Chapters 2 – 6
4	Jan. 29 Jan. 31	Membrane and Transport Chapter 7 EXAM I
5	Feb. 5 Feb. 7	CAREER SHOWCASE Energy Balances: Chapter 8, 9, 10
6	Feb. 12 Feb. 14	Chapter 8, 9, 10 Communication and Response: Chapter 11, 45
7	Feb. 19 Feb. 21	Chapter 43 EXAM II
8	Feb. 26 Feb. 28	Chapter 48, 49 Chapter 50
9	Mar. 5 Mar. 7	SPRING BREAK SPRING BREAK
10	Mar. 12 Mar. 14	Chapter 50 Genetics: Chapter 12, 13
11	Mar. 19 Mar. 21	Chapter 14, 15 Chapter 16
12	Mar. 26 Mar. 28	Chapter 17 EXAM III
13	Apr. 2 Apr. 4	Disease and Biomedical Research Chapter 18 Chapter 47
14	Apr. 9 Apr. 11	Chapter 19 Chapter 20
15	Apr. 16 Apr. 18	Chapter 20 EXAM IV

15. Attendance and Expectations – Students are expected to attend the classes. Absence from the lectures may lead to poorer performance in exam scores. A student is required to report a special event that causes his/her absence prior the class by email. Students are also expected to memorize some course materials; in particular when the instructor will make his best effort to reduce the memorization load from this course.
16. Grading – The performance index (*PI*) is used as the scale system to determine the final grade. The summation of individual *PI*, determined by each exam using the following formula, $PI = (x_i - \bar{x})/\sigma$, where x_i , \bar{x} , and σ represents the test score, the averaged test score, and the standard deviation for the i^{th} exam, respectively. In addition, if necessary, opportunities of bonus *PI* will offer (such as term paper) to burst students' overall *PI*.
17. Grading Scale – The student's final score (presented as *PI*) determines his/her final grade. In general, a student *PI* value locates in the region, >3 , $[1, 3]$, $[0.4, 1]$, $[-0.8, 0.4]$, $[-2, -0.8]$, $[-3, -2]$, $[-5, -3]$, or <-5 , will obtain an A, A-, B+, B, B-, C+, C, or F, respectively.
 “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 – 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:
 - UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
 - Career Resource Center, Reitz Union, 392-1601, career and job search services.
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.

Note: Statements in items 19-22 should be included as is.