
Professor	Jon D. Stewart Office: 102 Leigh Hall Phone: 352.846.0743 E-mail: jds2@chem.ufl.edu
Lectures	Monday, 8 and 9 th periods (3:00 – 4:55 p.m.), 207 Leigh Hall; Wednesday, 4 th period (10:40 – 11:30 a.m.), 242 Leigh Hall
Office hours	Monday, 4 th period, 10:40 – 11:30 a.m., 102 Leigh Hall Wednesday, 5 th period, 11:45 a.m. – 12:35 p.m., 102 Leigh Hall Wednesday, 9 th period, 4:05 – 4:55 p.m., 102 Leigh Hall
Course Objectives	Overview of concepts of biological catalysis, including transition state theory, descriptions and examples of mechanisms of biochemical catalysis and a survey of co-factors. Students who have successfully completed this course will be able to: <ul style="list-style-type: none">• Deduce enzyme mechanisms based on experimental data• Propose mechanisms for novel enzymes• Propose useful experiments for elucidating enzyme mechanisms
Prerequisites	None.
Grading	Three examinations (100 points each) will be scheduled during the semester (during the evenings of February 6, March 13 and April 10). The final examination (100 points) will be comprehensive, although it will somewhat emphasize material presented after the third in-class examination (10:00 a.m. – 12:00 p.m. on Thursday, May 2). No make-up exams will be offered. After each exam, approximate letter grade distributions will be posted separately for so that you will have a feel for your performance relative to others in the class as the semester progresses. The lowest grade from exams 1 - 3 will be dropped before calculating your final grade (you may not drop the final exam score). Your final letter grade will be calculated in two ways: <ol style="list-style-type: none">1) Points method. After dropping the exam score (from tests 1, 2 or 3) with the lowest number of points, the remaining two scores will be added together with the final exam score and compared to the distribution of total points for the class in order to assign a final letter grade. The class-wide mean of grades assigned by this method will be at the B+ / B border.2) Letter grade method. After dropping the lowest exam letter grade (from tests 1, 2 or 3), the remaining two letter grades will be averaged with that from the final exam by assigning points in the following manner: A = 4.00, A - = 3.67, B + = 3.33, B = 3.00, B - = 2.67, C + = 2.33, C = 2.00, C - = 1.67, D + = 1.33, D = 1.00, D - = 0.67, E = 0.00. The three best values will be averaged, then the following scheme will be used to convert this to the final course grade:

3.85 - 4.00 = A
3.51 - 3.84 = A -
3.18 - 3.50 = B +
2.85 - 3.17 = B
2.51 - 2.84 = B -
2.18 - 2.50 = C +
1.85 - 2.17 = C
1.51 - 1.84 = C -
1.17 - 1.50 = D +
0.84 - 1.16 = D
0.51 - 0.83 = D -
<0.51 = E

For example, if your three best exam letter grades are A, A and A-, your average would be $(4.00 + 4.00 + 3.67) / 3 = 3.89$, which is an A.

Whichever method (#1 or #2) gives you a higher grade will be used to calculate the letter grade reported to the Registrar.

Current UF grading policies can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Class Attendance

While attendance is voluntary, the lectures are an essential component of the experience for this class. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Make-Up Work

Since students are allowed to drop an exam score, no make-up exams will be scheduled.

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>. 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/>.

Required Textbook

The Organic Chemistry of Enzyme-Catalyzed Reactions, Revised Edition, Silverman, R.B., Academic Press, 2002.

Academic Honesty

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

(<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 in this class.

Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, 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.

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: <https://counseling.ufl.edu/>, 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 9-1-1 for emergencies). <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 Connections Center, Reitz Union, 392-1601. Career assistance and counseling. <https://career.ufl.edu/>

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Tentative Lecture Schedule

January 7	Introduction
January 7, 9	Proteases, esterases and lipases (Chapter 2)
January 14	Glutamine-dependent enzymes (Chapter 2)
January 14, 16	Phosphoryl transfer (Chapter 2)
<i>January 21</i>	<i>Martin Luther King, Jr. Day, No class</i>
January 23	Phosphoryl transfer (Chapter 2)
January 28, 30 / February 4	Nicotinamide-dependent enzymes (Chapter 3)
February 4, 6, 11	Flavin-dependent enzymes (Chapter 3)
February 11, 13	Quinone-dependent enzymes (Chapter 3)
February 18	Other redox enzymes (Chapter 3)
February 18, 20	Flavin-dependent hydroxylations (Chapter 4)
February 25	Pterin-dependent hydroxylations (Chapter 4)
February 27	Heme-dependent hydroxylations (Chapter 4)
<i>March 4, 6</i>	<i>Spring Break, No class</i>
March 11	S _N 1 substitutions (Chapter 6)
March 13	S _N 2 substitutions (Chapter 6)
March 18	S _N 2' substitutions (Chapter 6)
March 18, 20	Carbon dioxide-dependent carboxylations (Chapter 7)
March 25	Bicarbonate-dependent carboxylations (Chapter 7)
March 25	β-Keto acid decarboxylations (Chapter 8)
March 27	β-Hydroxy acid decarboxylations (Chapter 8)
April 1	α-Keto acid decarboxylations (Chapter 8)
April 1, 3	Amino acid decarboxylations (Chapter 8)
April 8	Racemases (Chapter 9)
April 10	<i>Cis / trans</i> -isomerases (Chapter 9)
April 15	<i>Anti</i> -eliminations and additions (Chapter 10)
April 17, 22	<i>Syn</i> -eliminations and additions (Chapter 10)
April 22, 24	Aldolases (Chapter 11)