	Course	BIOCHEMISTRY II - BIOL 3362, CHEM 3362
	Professors	Jeff DeJong Mehmet Candas
	Term	Fall 2015
	Meetings	Lecture T Th 2:30 - 3:45p.m. HH 2.402

Contact Information

Dr. Jeff DeJong	
Office Phone	972-883-6882
Office Location	RL 1.708
Email Address	dejong@utdallas.edu
Office Hours	Email or call for appointment

Dr. Mehmet Candas	
Office Phone	972-883-6338
Office Location	FN 3.206
Email Address	candas@utdallas.edu
Office Hours	Email or call for appointment

General Course Information

Pre-requisites	Biochemistry I – BIOL 3361 or CHEM 3361 This course is the second semester of a required sequence for biology majors.
Co-requisites	Biochemistry Workshop II – BIOL 3162 or CHEM 3162

Course Description and Learning Outcomes	Biochemistry is a gateway course and is essentially the language for medicine and biomedical research. This course is the second of a two-course sequence that provides students with a working knowledge of macromolecules and fundamental metabolic pathways. It is devoted to mastering: 1) photosynthesis; 2) the metabolism of amino acids, and nucleotides; 3) the structures of nucleic acids; 4) the structure, function and metabolism of lipids with emphasis on biological membranes and how lipid metabolism is integrated with other metabolic pathways. The threshold concepts in this course include (but are not limited to): biological systems follow the laws of chemistry and physics; how energy, specifically sunlight, is used for chemical synthesis; how inorganic carbon, nitrogen, and sulfur are incorporated into organic compounds; the pathways for synthesis of amino acids, nucleotides, and fatty acids, and the subsequent synthesis of proteins, nucleic acids, and membranes; transport across cell membranes; and the principles for macromolecular

	structure. When appropriate, these concepts are related to human physiology and disease. Upon completing this course, students will be able to: 1. Know and identify the structures of the major metabolites involved in photosynthesis, carbon fixation, the nitrogen cycle, ammonia assimilation, amino acid synthesis, the urea cycle, purine and pyrimidine synthesis, breakdown and synthesis of fatty acids, lipid signaling, eicosanoids, prostaglandins, terpenoids, cholesterol and steroid hormones. 2. Describe the major metabolic pathways involving the above compounds and recognize how they are regulated. 3. Explain dynamic processes involving membrane structure and function, membrane permeability, membrane proteins, ion channels, and transport across membrane. 4. Recognize the structural features of proteins, nucleic acids, and membranes and relate these features to their functions, e.g., catalysis and information storage (i.e., heredity). 5. Understand homeostatic responses in terms of integration of metabolism, endocrine regulation of energy metabolism and factors influencing metabolism.

Required Text	**R.H. Garrett and C.M. Grisham: Biochemistry, 5th edition, plus the online access to OWL/Cengage Learning.** OWL/Cengage Learning comprises learning modules and self-assessment problem sets as well as an electronic copy of the Garrett and Grisham text. If you are satisfied with an e-text, you only need to purchase the online OWL/Cengage Learning access. If you additionally want a print copy of the text, it is available hardbound or loose-leaf. Bundled purchasing options are available from bookstores or directly from the publisher. Earlier editions are acceptable for most of the material.

Tentative Schedule and Topics

#	Dates		Reading	Lecture Topics and Exams	Instructor
1.	Tue	8/25	Chap. 25	Amino Acid Metabolism	J. DeJong
2.	Thu	8/27	Chap. 25	Amino Acid Metabolism	J. DeJong
3.	Tue	9/1	Chap. 26	Nucleotide Metabolism	J. DeJong
4.	Thu	9/3	Chap. 26	Nucleotide Metabolism	J. DeJong
5.	Tue	9/8	Chap. 10/11	Nucleic Acids	J. DeJong
6.	Thu	9/10	Chap. 10/11	Nucleic Acids	J. DeJong
7.	Tue	9/15		EXAM 1	J. DeJong
8.	Thu	9/17	Chap. 10/11	Nucleic Acids	J. DeJong
9.	Tue	9/22	Chap. 28	DNA Metabolism	J. DeJong
10.	Thu	9/24	Chap. 28	DNA Metabolism	J. DeJong
11.	Tue	9/29	Chap. 28	DNA Metabolism	J. DeJong
12.	Thu	10/1	Chap. 28	DNA Metabolism	J. DeJong
13.	Tue	10/6	Chap. 21	Photosynthesis	J. DeJong
14.	Thu	10/8	Chap. 21	Photosynthesis	J. DeJong
15.	**Tue**	**10/13**		**EXAM 2**	**J. DeJong**
16.	Thu	10/15	Chap. 8	Lipid structures	M. Candas
17.	Tue	10/20	Chap. 8	Lipid structures	M. Candas
18.	Thu	10/22	Chap. 9	Membrane structure	M. Candas
19.	Tue	10/27	Chap. 9	Membrane dynamics	M. Candas
20.	Thu	10/29	Chap. 9	Membrane transport	M. Candas
21.	Tue	11/3	Chap. 23	Fatty acid catabolism	M. Candas
22.	Thu	11/5	Chap. 23	Fatty acid catabolism	M. Candas
23.	**Tue**	**11/10**		**EXAM 3**	**M. Candas**
24.	Thu	11/12	Chap. 24	Biosynthesis of fatty acids and lipids	M. Candas
25.	Tue	11/17	Chap. 24	Biosynthesis of fatty acids and lipids	M. Candas
26.	Thu	11/19	Chap. 24	Biosynthesis of fatty acids and lipids	M. Candas
27.	Tue	11/24	NO CLASS	THANKS GIVING WEEK	
28.	Thu	11/26	NO CLASS	THANKS GIVING WEKK	
29.	Tue	12/1	Chap. 27	Integration of metabolism	M. Candas
30.	Thu	12/3	Chap. 27	Integration of metabolism	M. Candas
31.	Tue	12/8	Chap. 27	Integration of metabolism	M. Candas
32.		**TBA**			**M. Candas**

(***Descriptions and timelines are subject to change at the discretion of the Professors***)

Course Policies

Tests, Online homework assignments and Grading	There will be four in-class exams and 4 sets of homework assignments that will be completed online. The exams may include questions with multiple choice, short answer and problems as well as identification of structures, reaction mechanisms and pathways. Exam grades will be posted on eLearning. At the end of the semester the average of your four exam scores will be counted as equivalent to 85% of your course grade. There will be chapter mastery questions and self-assessment problems to be completed online at the text publisher's OWL website (www.cengage.com/owl) for each of the 11 chapters we will cover. You will need an access code to login and access to OWL/Cengage Learning System. Instructions for registering and logging onto the OWL website are provided at the end of the syllabus. Instructions are posted on the class eLearning site as well. The OWL questions and problems for the 11 chapters will be divided into 4 sets, due online successively at the end of the same day as the exams are given. Final letter grade will be based on the sum of the exam percentage (85%) and the composite score from all OWL self-assessment problems, which will be counted as equivalent to 15% of your course grade. You will receive the same letter grade in both BIOL/CHEM 3362 (lecture) and BIOL 3162 (workshop). Letter grade will be posted via Galaxy. Midterm letter grades will be based on available exam score(s) at the time of midterm grading. Final letter grades will be based on all exam scores and cumulative OWL performance score. Exam scores and posted grades are finalized within 1 week of submission and no score change will occur after.
Make-up Exams	There will be no make-up exams except for the most extreme of documented circumstances (event of illness, official university business, or professional school interviews). If you do miss an exam, the score will be recorded as zero, "0". Most "return to work" slips do not indicate that there was a sickness or emergency, and they do not specify the date and reason for visit to a doctor. Thus you need to provide an official documentation indicating the date and reason of admission to a clinic, or a documentation indicating attendance to a school interview, or demonstrating an extraordinary/emergency situation. Since religious holidays are known in advance, you must inform about them in the beginning of the semester. Make-up exams may be different from regular exams and may include a verbal component and/or drawing of structures. If make-up exam score is significantly higher than the class average for that exam and/or student's previous exam(s), the average of student's other exams may be assigned as the make-up exam grade. Students should not be able to benefit from the extra time that other students do not have. Students can maintain their

	average but not improve upon it by taking make up exams. Make up exams will not be given earlier than actual date and time of testing.
Class Attendance	Strongly recommended. Be very punctual on your class attendance on the exam days. Students arriving at the exams later than 15 min after the beginning of exam time will not be admitted to the exam. Students will not be admitted to the exams if any other student has completed and turned in exam at that time. There may not be a make-up exam for missed exams unless student provides documented excuse for the circumstance.
Use of Electronic Devices	Use of all electronic devices including laptop computers, cellular telephones, PDAs, headphones, pagers are distractive to teaching and learning process and they are not permitted. Such devices must be turned off and put away during lectures and exams. At the discretion of the Professor, laptop computers may be allowed during class only for taking notes, following the lecture slides or group work. If you are using a computer for taking notes, you may be asked to sit in the rear of the classroom separately as to not unduly distract, interfere or disrupt your classmates. Students who engage in use of electronic devices for activities unrelated to the learning experience will be reported to the Dean of Students Office for academic disciplinary action. Additionally, please avoid personal communication unless it is an emergency as not to disturb other students and disrupt class flow.
Workshops	There is a required workshop for this course. The workshops will go over material presented in the textbook and lectures. You will receive the same letter grade in both BIOL/CHEM 3362 and BIOL 3261.
Supplemental Instruction	Supplemental Instruction (SI) is offered for this course. Attendance is voluntary. For information about the days, times, and locations for SI sessions, refer to: www.utdallas.edu/studentsuccess/leaders/si.html

Student Conduct and Discipline	The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year. The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students

	in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391). A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.
Academic Integrity	The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work. Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings. Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.
Email Use	The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.
Withdrawal from Class	The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, we cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures	Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*. In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the deal will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.
Incomplete Grades	Incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within 8 weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.
Disability Services	The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m. The contact information for the Office of Disability Services is: The University of Texas at Dallas, SU 22 PO Box 830688 Richardson, Texas 75083-0688 (972) 883-2098 (voice or TTY) Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for

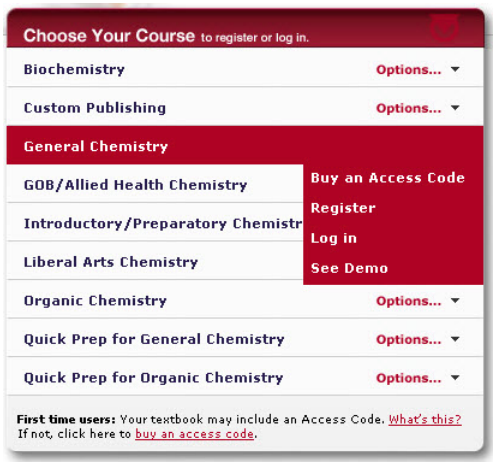
	students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance. It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.
Religious Holy Days	The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated. The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment. If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.
Off-Campus Instruction and Course Activities	Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean.

These descriptions and timelines are subject to change at the discretion of the Professors.

Online Web Learning	**BIOL/CHEM 3362.001 Biochemistry II Fall 2016 Candas and De Jomg**

Registration and Log In

1. To use OWL for the first time, go to **www.cengage.com/owl** and choose your course from the red box as shown below, then click **Register.** If you purchased an instant access code from **www.cengagebrain.com**, please ignore any offers to register your access code at that site. You can only register at www.cengage.com/owl**.**



2. On the next page, choose your textbook carefully, because some books appear as "regular" editions and also as **International Editions** (for use outside the U.S.) or as **Enhanced** editions. Be sure to select the exact title, author(s), and edition that your instructor has chosen. If you can't find your book, make sure your instructor intends to use OWL for your course.

3. On the next page choose your school and click the blue arrow under Student **Registration**.

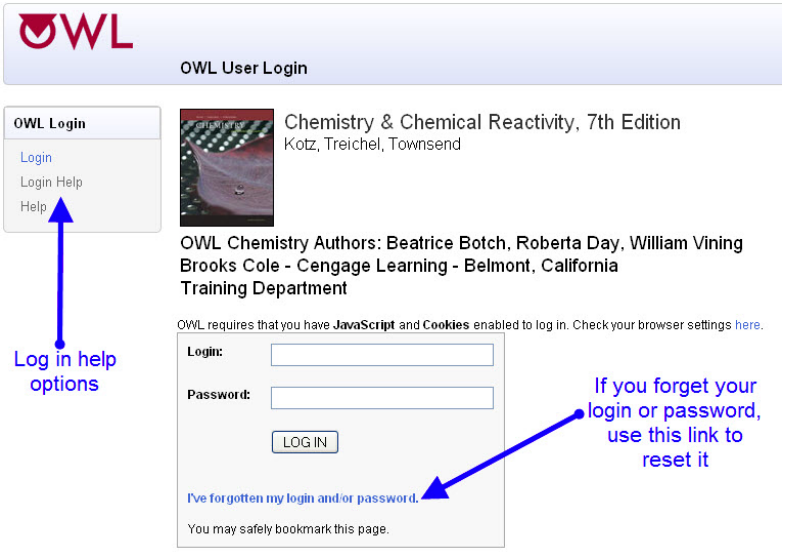
Department	User Login Page	Student Registration	Request Instructor Account
Biological Sciences Department	→	→	→

4. Choose your course and section. If you don't see the correct course and section names of the class you are taking, go back to steps 1 -3 and make sure you chos textbook and school. If you still don't see your course, tell your instructor.

5. Enter your information in the Self Registration Form. Enter your access code and click **Continue** to complete the registration process.

6. After you see the Successful Registration confirmation, click **Login Page** at the top of the screen.

7. When you see the Login page below, **bookmark it** for future visits to OWL. Here you'll enter the login name and password you chose during registration.
(Example screen shot below.)



Logging into OWL

1. After you register, if you forget to bookmark your OWL login page, you can always log in from www.cengage.com/owl**.**
2. Choose your course and then choose **Log In**.
3. Choose your textbook and then choose your school.
4. Click the blue arrow under **User Login Page**. On the next screen, enter the login name and password you chose during registration.

Remember, your course and section information is:

Course	Section #	Instructor	Location	Time
BIOL 3362 BIOCHEMISTRY II	BIOL 3362.001	Candas and De Jong	HH 2.402	TuTh 2:30 pm – 3:45 pm