

Course Syllabus

Course Information

(course number, course title, term, any specific section title)

BIOLOGY 2311, Sec 501, INTRODUCTION TO MODERN BIOLOGY
Tuesday and Thursday, 5:30-6:45pm, **SLC 1.102 (Clark Center)**

Professor Contact Information

(Professor's name, phone number, email, office location, office hours, other information)

Dr. John G. Burr: FN 3.110; 883-2508; burr@utdallas.edu
Office Hours: Fri, 3:30-4:30 pm, or by appointment

Course Pre-requisites, Co-requisites, and/or Other Restrictions

(including required prior knowledge or skills)

Pre-requisite: General Chemistry I, II

BIOL 2311 is the first part of a two-semester lecture sequence of introductory biology. **There is a co-requisite workshop, BIOL 2111.** All students enrolled in BIOL 2311.501 must also enroll in one of the BIOL 2111 workshop sections tied to the Sec 501 lecture course (BIOL 2111 sections 001-006). The grade for BIOL 2111 will be determined by attendance and scores on homework and occasional quizzes, and it will be worth 10% of the overall grade given for BIO 2301. The same grade will be assigned for both BIOL 2311 and BIOL 2111. If you withdraw from BIO 2311, you must also withdraw from BIO 2111.

Again, **to re-emphasize:** You must co-enroll in a workshop together with the lecture course. The workshop you enroll in **must be** one of the six workshops listed as BIO 2111 sections **001 through 006**. **If you enroll in a 007-012 workshop, you will be forced to drop it. When you then attempt to enroll in a correct (001-006) workshop there may be very limited availability.** This is because students in my workshops (001-006) do quizzes or homeworks based on my lectures; the other workshops (007-012) are based on the lectures given to the students enrolled in the parallel lecture course, BIO 2311.001; the one that meets at 11:30 am.

Course Description

The course content of BIOL 2311.501 emphasizes cellular membranes and organelles, introductory biochemistry, genetics and molecular cell biology. For the first three quarters of the semester, the lectures on these topics will more or less follow the textbook; for the last quarter of the semester, we will illustrate the concepts of molecular cell biology by delving more deeply than does your text into the molecular basis of cancer.

Student Learning Objectives/Outcomes

Objectives: This course is designed to give students information about the basic concepts of biology with an emphasis on the molecular and cellular basis of biological phenomena. Topics include the origin and evolution of life, cellular substructure, properties of biological macromolecules, cellular membranes, intermediary metabolism and photosynthesis, elementary classical and molecular genetics, including gene regulation, and selected aspects of the molecular basis of cancer.

The student enrolled in the BIOL 2311 lecture course is also enrolled in a workshop section, BIOL 2111, as a co-requisite. These weekly workshops are designed to give the student an opportunity to review issues presented in BIOL 2311 in a small, informal, question and answer session.

Outcomes: Upon completing this course, students will:

1. Be able to explain and describe the basic functions of cells including energy production and utilization, cell division, and the basic mechanisms of genetic inheritance.
2. Be able to explain how genes function and how they are controlled.

Required Textbooks and Materials

Required Text: **Biological Science**, 4th Ed., Scott Freeman (2010), Vol. 1 (ISBN 0-32-161347-3) (This is a less expensive paperback representing just the first part of the hardback text that contains the material covered in the lectures.)

Suggested Course Materials

Optional text: **The Cancer Book**, Geoffrey Cooper (1993) (ISBN 0-86720-770-1)

Lecture Notes and other course information will be posted on the course web page:

(<http://www.utdallas.edu/~burr/BIO2311/>)

Assignments & Academic Calendar

(Topics, Reading Assignments, Due Dates, Exam Dates)

Another reminder: You must co-enroll in a workshop together with the lecture course. The workshop you enroll in **must be** one of the six workshops listed as BIO 2111 sections **001 through 006**. **If you enroll in a 007-012 workshop, you will be forced to drop it. When you then attempt to enroll in a correct (001-006) workshop there may be very limited availability.** This is because students in my workshops (001-006) do quizzes or homeworks based on my lectures; the other workshops (007-012) are based on the lectures given to the students enrolled in the parallel lecture course, BIO 2311.001; the one that meets at 11:30 am.

Session	Lecture	Date	Subject	Assignment
1	1	Aug 27 Tue	Origin & evolution of life	Chapt. 1
2	2	Aug 29 Thurs	Chemistry of life	Chapt. 2
3	3	Sept 3 Tue	Macromolecules (1)	Chapt. 3-5
4	4	Sept 5 Thurs	Macromolecules (2)	Chapt. 3-5
5	5	Sept 10 Tue	Cell membranes (1)	Chapt. 6
6	6	Sept 12 Thurs	Cell membranes (2)	Chapt. 6
7	7	Sept 17 Tue	Cell structure (1)	Chapt. 7
8	--	Sept 19 Thurs	TEST 1 (Lectures 1-6) The test will cover up to and through all my lecture material on cell membranes; Chapters 1-6 in your textbook.	--
9	8	Sept 24 Tue`	Cell structure (2); Respiration (1)	Chapt. 7; 9
10	9	Sept 26 Thurs	Respiration (2)	Chapt. 9
11	10	Oct 1 Tue	Photosynthesis (1)	Chapt. 10
12	11	Oct 3 Thurs	Photosynthesis (2)	Chapt. 10
13	12	Oct 8 Tue	Cell Division	Chapt. 11 pp. 194-204
14	13	Oct 10 Thurs	Meiosis	Chapt. 12
15	14	Oct 15 Tue	Mendelian Genetics (1)	Chapt. 13
16	--	Oct 18 Thurs	TEST 2 (Lectures 7-12) (ie, all my lecture material since ‘membranes’ up through and including the topic of cell division) (Chapts 7, 9-11 in textbook)	--
17	15	Oct 22 Tue	Mendelian Genetics (2)	Chapt. 13
18	16	Oct 24 Thurs	Mendelian Genetics (3); DNA synthesis, mutation, repair (1)	Chapt. 13; 14
19	17	Oct 29 Tue	DNA synthesis, mutation, repair (2)	Chapt. 14
20	18	Oct 31 Thurs	How do genes work?	Chapt. 15
21	19	Nov 5 Tue	Transcription and Translation (1)	Chapt. 16
22	20	Nov 7 Thurs	Transcription and Translation (2)	Chapt. 16
23	21	Nov 12 Tue	Regulation of gene expression: prokaryotes, eukaryotes	Chapt. 17, 18
24	22	Nov 14 Thurs	Cancer: epidemiology; terminology (for the 3 rd edition, Chapt 11, pp 237-240)	Lecture Notes, Chapt 11: pp 206-208
25	--	Nov 19 Tue	TEST 3 (Lectures 13 through part of lecture 21; ie, up to and including my lectures on the material in Chapters 12 through 17 in your book) (not including eukaryotic gene regulation, Chapter 18)	--
26	23	Nov 21 Thurs	Cancer: chemical carcinogenesis	Lecture Notes
27	24	Nov 26 Tue	The role of viruses in cancer: DNA tumor viruses	Lecture Notes
--	--	Nov 28	(Thanksgiving Holiday)	--
28	25	Dec 3 Tue	The role of viruses in cancer: RNA tumor viruses	Lecture Notes
29	26	Dec 5 Thurs	Oncogenes and tumor suppressor genes	Lecture Notes
30	--	Dec 10 Tue	TEST 4 (Last part of Lec 21[eukaryotic gene regulation, Chapter 18 in book] and Cancer Lec’s 22-25)	--

Grading Policy

(including percentages for assignments, grade scale, etc.)

There will be four exams given in BIO 2311. The exam questions will be a combination of multiple-choice plus brief essay or short-answer questions. Each of the four exams will be worth 22.5% of the final grade, for a total of 90% for the four exams, and each will cover all of the material presented in class since the previous exam (lectures, handouts, and assigned reading). The remaining 10% of your course grade will be based on your homework grades and attendance in the workshops.

Course & Instructor Policies

(make-up exams, extra credit, late work, special assignments, class attendance, classroom citizenship, etc.)

Makeup exams will be given only in case of a documented emergency and will be MORE DIFFICULT than the regularly scheduled exam. You must contact the Instructor within 24 hours of the missed exam and schedule a makeup exam to be taken immediately.

Field Trip Policies

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 the website address http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean. Below is a description of any travel and/or risk-related activity associated with this course.

Student Conduct & 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, I 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 dean 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 Grade Policy

As per university policy, 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 eight (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.

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