

Course Syllabus

Course Information

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| <i>Course Number/Section</i> | BIO 3351-001 |
| <i>Course Title</i> | Secrets of Cells |
| <i>Term</i> | Summer 2008 |
| <i>Days & Times</i> | Mon. and Wed.; 2:30-4:45 pm; FO 3.616 |

Professor Contact Information

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| <i>Professor</i> | Dr. Gail Breen |
| <i>Office Phone</i> | 972 883-2504 |
| <i>Email Address</i> | breen@utdallas.edu |
| <i>Office Location</i> | FO 3.710 |
| <i>Office Hours</i> | Mon. 4:45-5:30; or by appointment |
| <i>Teaching Assistants</i> | Farah Bardhai Farah.bardhai@student.utdallas.edu Kourtney Schroeder: kourtney.schroeder@student.utdallas.edu Mahzad Habibi-Nasab: mhabibin@utdallas.edu |

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

This class is a core science elective open to all majors.

Course Description

This course will examine the basic concepts of cell biology, including the structure of cells, the structure and function of DNA, genetic inheritance, mutations in DNA, gene therapy, stem cells, the immune system, the nervous system, and the endocrine system.

Student Learning Objectives/Outcomes

1. Students will be able to describe basic concepts of cell biology, including the structure of cells, the structure and function of DNA, genetic inheritance, mutations in DNA, gene therapy, and stem cells.
2. Students will be able to describe the function of several organ systems including the immune system and the endocrine system.
3. Students will be able to apply scientific laws and principles of cell biology to arrive at problem solutions.
4. Students will be able to identify how scientific methods have been or can be used to test or develop scientific concepts.

Required Textbooks

Biology: Concepts and Applications, C. Starr, Seventh Edition, Thomson/Brooks-Cole
ISBN Number: 0-495-11981-4

Suggested Course Materials

Suggested Readings

See below

Assignments & Academic Calendar

Topics, Reading Assignments, Due Dates, Exam Dates

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| May 28 | Introduction |
| June 2 | Secrets of the Cell Chapter 3: Molecules of Life Chapter 4: How Cells are Put Together Chapter 5: How Cells Work |
| June 4 | DNA, The Amazing Double Helix Chapter 12: DNA: Structure and Function |
| June 9 | Understanding the Basic Concepts of Genetics Molecular Evolution Chapter 8: How Cells Reproduce (pp126-127) Chapter 9: Meiosis and Sexual Reproduction (pp 140-146) Chapter 10: Observable Patterns of Inherited Traits (pp 153-155) Chapter 11: Chromosomes and Human Genetics |
| June 11 | Genes, Mutations and Viruses Chapter 13: From DNA to Proteins Chapter 14: Control over Genes (pg 210-213) Sickle Cell Anemia (pp 44-45; 159; 202; 252-254; 556) |
| June 16 | Genetic Code: Transcription, Protein Synthesis and Mutations Chapter 13: From DNA to Proteins |

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| June 18 | Review |
| June 23 | EXAM 1 (covers material from June 2 to June 16) CN 1.102 |
| June 25 | Human Gene Therapy and the Future of Modern Medicine Chapter 15: Studying and Manipulation Genomes (p228-231; p587i) |
| June 30 | Science of Cloning Spare Parts- Growing Human Organs Chapter 28: Animal Tissues and Organ Systems |
| July 2 | The Eukaryotic Cell Evolves Chapter 17: Evolutionary Patterns, Rates and Trends (page 282) Chapter 18: The Origin and Evolution of Life |
| July 7 | Animal Structure and Function Chapter 28: Animal Tissues and Organ Systems Chapter 32: How Animals Move |
| July 9 | Review |
| July 14 | EXAM 2 (covers material from June 25 through July 7) CN 1.102 |
| July 16 | Hormones: Messengers Chapter 31: Endocrine Control |
| July 21 | Battle Scars- An Overview of Our Defense against Disease Chapter 34: Immunity |
| July 23 | Viruses: The Deadly Enemy/Influenza Chapter 34: Immunity |

Chapter 19: Prokaryotes and Viruses (pg 308- 309)

July 28 Review
 Course Evaluations

July 30 **EXAM 3 (covers material from July 16 through
 July 23)**
 CN 1.102

August 4 Last day of classes; **papers due by 5 pm.**

Grading Policy

Exam 1- 35% grade
Exam 2- 30% grade
Exam 3- 30% grade
Attendance- 5% grade

A+ 97-100
A 93-96
A- 90-92
B+ 87-89
B 83-86
B- 80-82
C+ 77-79
C 73-76
C- 70-72
D+ 67-69
D 63-66
D- 60-62
F less than 60

Course Policies

Exams

Exams will start promptly at **2:30 pm**. Students must be seated by 2:30 pm in order to take an exam. Any student not seated by 2:30 pm will either not be allowed to take the exam or points will be deducted for being late (1 point for every minute that a student is late).

Make-up exams

No make-up exams are given except in the case of extreme documented emergencies. Missed exams will receive a zero score. In the case of an extreme emergency, the student must inform the instructor within 24 hours of the exam. The student must complete a make-up exam before the original exam is graded and the answer key is released (typically one week).

Extra Credit

N/A

Late Work

Not accepted. All exams must be taken on the assigned dates. The research paper must be turned in on the assigned date.

Special Assignments

N/A

Class Attendance

Class attendance is required. Attendance will be taken and will be worth 5% of your grade. A student cannot miss any more than 3 class periods in order to receive credit for the course. Each student can have one “excused” absence for legitimate documented reasons (such as illness).

Classroom Citizenship

Any action that interrupts the lecture or disturbs your classmates is unacceptable. Examples of such actions include:

- (a) Entering the classroom late.
- (b) Leaving the classroom before break or before the end of class.
- (c) Cell phones, buzzers, pagers etc. – these must be turned off unless you are a member of an emergency response team.

Students should raise their hands to participate in the discussion or ask questions and avoid side conversations with other students.

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.

For all exams, students must show their UTD ID. No hats, cell phones books etc. are allowed during the exams.

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.

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 given below. Additional information is available from the office of the school dean. (http://www.utdallas.edu/Business Affairs/Travel_Risk_Activities.htm)

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