Course	**BIO 5420, Section 001, Molecular Biology**
Professors	Juan E. González, Zachary Campbell
Term	Fall 2016
Meetings	Mondays and Fridays, 8:30-10:15 AM, FO 3.616

Professor's Contact Information (Dr. González)

Office Phone	972-883-2526
Other Phone	972-883-4124
Office Location	NSERL 2.704
Email Address	jgonzal@utdallas.edu
Office Hours	By appointment
Other Information	Course web page: eLearning

Professor's Contact Information (Dr. Campbell)

Office Phone	972-883-4186
Office Location	BSB 12.510
Email Address	Zachary.Campbell@utdallas.edu
Office Hours	By appointment

General Course Information

Pre-requisites, Co-requisites, & other restrictions	Some undergraduate background knowledge on genetics and molecular biology expected
Course Description	Genetic analysis of gene structure (mutations and their analysis, complementation, and recombination), gene expression (transcription, RNA processing, translation), and the regulation of gene expression in selected model systems (viral, prokaryotic, organellar, eukaryotic); principles of genetic engineering (cloning and recombinant DNA technology).
Learning Outcomes	*Upon completing this course, students will:* 1. Be able to understand the major concepts of molecular biology and genetics of prokaryotic and eukaryotic organisms. 2. Be able to read, explain, and discuss scientific papers in the molecular biology field. 3. Be able to analyze research problems and design experiments to address them.
Required Texts & Materials	No textbook required
Suggested Texts, Readings, & Materials	Readings will be posted in the course web page; access to an upper-level undergraduate *Genetics* textbook is strongly recommended.

Assignments & Academic Calendar

Lecture	Date	Instructor	Subject	Source
1	August 22	González	Mutations	Handouts
2	August 26	González	Mutational analysis and recombination	Handouts
3	August 29	González	Genetic analysis of genes: complementation	Handouts
4	September 2	González	Restriction enzymes and biology of plasmids	Handouts
----	September 5	----	Holiday (Labor Day)	----
5	September 9	González	RNA polymerase	Handouts
6	September 12	González	Exam 1	Lectures 1-5
7	September 15	González	No lecture	----
8	September 19	González	The *lac* operon	Handouts
9	September 23	González	Transcription termination	Handouts
10	September 26	González	Phage lambda	Handouts
11	September 30	González	Transposons	Handouts
12	October 3	González	Signal transduction in bacteria	Handouts
13	October 7	González	Exam 2	Lectures 8-12
14	October 10	Campbell	Transcription I	Handouts
15	October 14	Campbell	Transcription II	Handouts
16	October 17	Campbell	Transcription III	Handouts
17	October 21	Campbell	Transcription IV	Handouts
18	October 24	Campbell	Chromatin	Handouts
19	October 28	Campbell	RNA and RNA-binding proteins	Handouts
20	October 31	Campbell	Splicing, Capping, and 3' end formation	Handouts
21	November 4	Campbell	Exam 3	Lectures 14-20
22	November 7	Campbell	Protein synthesis I	Handouts
23	November 11	Campbell	Protein synthesis II	Handouts
24	November 14	Campbell	Post-transcriptional regulation I - Proteins	Handouts
25	November 18	Campbell	Post-transcriptional regulation II - RNAs	Handouts
----	November 21-26	------	Fall Break	-----
26	November 28	Campbell	Methods	Papers
27	December 2	Campbell	Students led literature discussion	Papers
28	December 5	Campbell	Exam 4	Lectures 22-27

Course Policies

Grading (credit) Criteria	Dr. González is responsible for two non-cumulative exams (exam 1 and exam 2), each worth 25% of the final grade. Dr. Campbell is responsible for two non-cumulative exams (exam 3 and exam 4), each worth 25% of the final grade.
Make-up Exams	No make up exams
Extra Credit	No extra credit available.
Late Work	N/A
Special Assignments	N/A
Class Attendance	Required
Field Trip Policies	N/A
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 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 Grades	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 http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.