Syllabus BIOL 5380
Topics in Advanced Biology: Synthetic Biology
Fall 2019
Meeting Times: M 11:15 am -2:00 pm
Location: HPR 251
First Day of Class: August 26, 2019
Last Day of Class: December 14, 2019

Instructor:
Dr. Clement Chan
BEP 109
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Email: tchan@patriots.uttyler.edu
Office Hours: Monday to Friday 10:00-11:00 am

Course Description: This course focuses on the state-of-the-art approaches for modifying organisms that can be used for environmental, industrial, and biomedical application. Students will gain in-depth understanding on central biological processes at the molecular level. They will also learn how these processes can be harnessed for creating new biological functions and behaviors.

Student Learning Objective: After accomplishing activities in this course, students are expected to gain abilities in:

1. Apply the principle of central dogma of molecular biology to analyze genetic pathways
2. Design biological processes involved in transcriptional, post-transcriptional, translational, and post-translational regulations of genetic activities
3. Use techniques for genetic manipulation and genetic analyses
4. Develop research projects for characterizing biological systems
5. Appreciate how engineering approaches can be applied to biological systems for solving problems

Required Reading Materials:
• Academic research articles will be supplied to students

Grading:
Exam 1 15%
Exam 2 15%
Exam 3 15%
Homework 25%
Final exam 30%

90%-100% = A 80-89% = B 70%-79% = C 60%-69% = D <60% = F

Attendance: This course is developed based on a flipped classroom model. Students are expected to watch online videos and read the assigned chapters on the textbook before coming to lectures. Lectures are designed for students to ask questions related to the course materials and homework assignments.

Exam format: Exam formats are open to change. They are mainly take-home essays and in-class presentations.
Make-up Exams: If you contact me in advance, and if you have a valid reason with documentation, I will offer you a make-up exam. Keep in mind that a make-up exam can be very different from the original one.

Class schedule (subject to change):

Topics:
- Genetic mechanisms of gene expression  Weeks 1-2
- Molecular pathways for Retrieving Genetic Information  Weeks 2-3
- Techniques of Biotechnology  Weeks 3-5
- Transcription: DNA to RNA  Weeks 5-6
- Transcriptional Control as Cellular Responses  Weeks 6-8

-----------------------------------Spring Break-------------------------------------------

- Post-transcriptional Regulation  Weeks 8-9
- Translation: RNA to Protein  Weeks 10-11
- Translational Control to Modulate Biological Activities  Weeks 11-12
- Post-translational Regulation  Weeks 12-13
- Regulatory Circuits for Controlling Cellular Behaviors  Weeks 13-14

Tentative exam schedule:
- Exam 1 – September 23, 2019
- Exam 2 – October 21, 2019
- Exam 3 – November 18, 2019
- Final exam – TBD

University Policies:

UT Tyler Honor Code
Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

Students Rights and Responsibilities
· To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: http://www.uttyler.edu/wellness/rightsresponsibilities.php

Grade Replacement/Forgiveness and Census Date Policies
· Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. Grade Replacement Contracts are available in the Enrollment Services Center or at http://www.uttyler.edu/registrar. Each semester’s Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar.
· Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract.
· The Census Date is the deadline for many forms and enrollment actions students need to be aware of. These include:
  · Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
  · Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
  · Schedule adjustments (section changes, adding a new class, dropping without a “W” grade)
  · Being reinstated or re-enrolled in classes after being dropped for non-payment
  · Completing the process for tuition exemptions or waivers through Financial Aid

State-Mandated Course Drop Policy
· Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date).
· Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.
Disability Services

- In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including non-visible a disability diagnosis such as a chronic disease, learning disorder, head injury or ADHD, or you have a history of modifications or accommodations in a previous educational environment you are encouraged to contact the Student Accessibility and Resources office and schedule an interview with an Accessibility Case Manager. If you are unsure if the above criteria applies to you, but have questions or concerns please contact the SAR office. For more information or to set up an appointment please visit the SAR webpage (www.uttyler.edu/disabilityservices/) or the SAR office located in the University Center, Room 3150 or call 903.566.7079. You may also send an email to saroffice@uttyler.edu.

Student Absence due to Religious Observance

- Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

Student Absence for University-Sponsored Events and Activities

- If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

Social Security and FERPA Statement:

- It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

Emergency Exits and Evacuation:

- Everyone is required to exit the building when a fire alarm goes off. Follow your instructor’s directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

Student Standards of Academic Conduct: Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, part to another person taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

(i) “Cheating” includes, but is not limited to:
- copying from another student’s test paper;
- using, during a test, materials not authorized by the person giving the test;
- failure to comply with instructions given by the person administering the test;
- possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed “crib notes”. The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
- using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
- collaborating with or seeking aid from another student during a test or other assignment without authority;
- discussing the contents of an examination with another student who will take the examination;
- divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructors has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
- substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
- paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
- falsifying research data, laboratory reports, and/or other academic work offered for credit;
- taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
- misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.

(ii) “Plagiarism” includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another’s work and the submission of it as one’s own academic work offered for credit.

(iii) “Collusion” includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.

Concealed Campus Carry Statement:

- We respect the right and privacy of students who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at www.uttyler.edu/about/campus-carry/index.php.

UT Tyler is a Tobacco-Free University

- No forms of tobacco will be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors.
- Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products.
- There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit www.uttyler.edu/tobacco-free.