CSAT 6074
Molecular Aspects of Epigenetics

Fall, 2018

CLASS DAYS and TIME: Tuesday and Thursday: 9.15AM-10.45AM

CLASSROOM: AL&TC 2.212

COURSE FACULTY: Dr. Manjeet Rao
OFFICE LOCATION and HOURS: GCCRI 4.100,

EMAIL: raom@uthscsa.edu;

TELEPHONE: Rao:562-9119;

READ THIS DOCUMENT CAREFULLY - YOU ARE RESPONSIBLE FOR ITS CONTENTS.

COURSE DESCRIPTION AND OBJECTIVES

The purpose of this course is to develop an understanding of the molecular aspects of epigenetics. This Advanced Course will provide a unique learning experience that prepares the student to evaluate and design new research in the areas of epigenetic processes including imprinting, gene silencing, X chromosome inactivation, position effect, reprogramming and the progress of tumorigenesis. This module concerns epigenetic mechanisms. Topic will include: DNA methylation, Histone modifications, epigenetics and stem cells, Cancer epigenetics, RNA interference and epigenetics, Bioinformatics of epigenetics and Translational epigenetics. This course will be covered by didactic program as well as student discussion. For the student discussion module, faculty and students will jointly discuss key publications that serve to bridge the gap between the student's prior understanding of the field and the state of the art in that area.

Pre-requisites – No prerequisite

Semester credit hours – 2 credit hours

By the end of this course, each student should be able to:

- Know the importance of epigenetics in human pathological conditions including Cancer, Alzheimer, Autism, and Schizophrenia.
- Know the importance of epigenetics during developmental processes.
- Understand the molecular aspects of epigenetics

COURSE ORGANIZATION

The main teaching modalities used in this course include:

1) Didactic

Materials – Research papers, Notes, Slides

Computer Access – Personal computers.

Reading Assignments – Research papers

ATTENDANCE

It is expected that students will attend all classes.

TEXTBOOKS

Required: Not applicable

Recommended: Not applicable

GRADING POLICIES AND EXAMINATION PROCEDURES

Students will be graded based on their participation, initiative and their ability to perform research techniques.

Grading System

Include a grading scale used to determine final grades, see example below

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

REQUESTS FOR ACCOMODATIONS FOR DISABILITIES

In accordance with policy 4.2.3, **Request for Accommodation Under the ADA and the ADA Amendments Act of 2008 (ADAAA)**, any student requesting accommodation must submit the appropriate request for accommodation under the American with Disabilities Act (ADA, form 100) to his/her appropriate Associate Dean of their School and a copy to the ADA Coordinator. Additional information may be obtained at http://uthscsa.edu/eeo/request.asp.

ACADEMIC INTEGRITY AND PROFESSIONALISM

Any student who commits an act of academic dishonesty is subject to discipline as prescribed by the UT System Rules and Regulations of the Board of Regents. Academic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an exam for another person, signing attendance sheets for another student, and any act designed to give unfair advantage to a student or the attempt to commit such an act. Additional information may be obtained at http://catalog.uthscsa.edu/generalinformation/generalacademicpolicies/academicdishonestypolicy/

TITLE IX AT UTHSCSA

Title IX Defined:
Title of the Education Amendments of 1972 is a federal law that prohibits sex discrimination in education. It reads "no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."

University of Texas Health Science Center San Antonio's Commitment:
University of Texas Health Science Center San Antonio (UTHSCSA) is committed to maintaining a learning environment that is free from discriminatory conduct based on gender. As required by Title IX, UTHSCSA does not discriminate on the basis of sex in its education programs and activities, and it encourages any student, faculty, or staff member who thinks that he or she has been subjected to sex discrimination, sexual harassment (including sexual violence) or sexual misconduct to immediately report the incident to the Title IX Director.

In an emergency, victims of sexual abuse should call 911. For non-emergencies, they may contact UPD at 210-567-2800. Additional information may be obtained at http://students.uthscsa.edu/titleix/

EMAIL POLICY

Students can directly email instructors for any questions about the class.

USE OF RECORDING DEVICES

N/A

ELECTRONIC DEVICES

Students are allowed to use computers for taking notes and going over class materials.

At the end of the syllabus include a detailed class schedule (see example below), which includes class dates, topic or title of lessons, reading or assignment due dates, test dates, and other important events such as holidays, etc. It is a good idea to clearly identify the class **schedule** as TENTATIVE, depending upon the progress of the class.

TENTATIVE CLASS SCHEDULE

CSBL6074

Molecular Aspects of Epigenetics

Fall, 2018

WEEK	DATE	TOPIC	Assignment	Instructor and Modality
Week 1	Sep 20, 2018	Basics of epigenetics: General transcription/ Nucleosome/ chromatin packaging/nuclear dynamics and long range control	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
Week 2	Sep 25, 2018	DNA methylation, histone modification, RNAi and epigenetics	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
	Sep 27, 2018	Students presentation/Discussion	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
Week 3	Oct 2, 2018	Development & Epigenetics: Epigenetic heritability (changes during embryonic development)	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
	Oct 4, 2018	X chromosome inactivation and genomic imprinting	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
Week 4	Oct 9, 2018	Epigenetics and environment	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
	Oct 11, 2018	Student Presentation/Discussion	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
Week 5	Oct 16, 2018	Stem Cell Epigenetics	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
	Oct 18, 2018	Epigenetics: Human disease and disorders; (Cancer)	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
Week 6	Oct 23, 2018	Epigenetics: Human disease and disorders; (Aging, cognitive dysfunction, neurobehaviour, cardiovascular diseases and reproduction)	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
	Oct 25, 2018	Epigenetics: Human diseases	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
Week 7	Oct 30, 2018	Epigenetics: Human diseases	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
Week 8	Nov 1,2017	Student Presentation/Discussion	AL&TC 2.212	Dr. Manjeet Rao raom@uthscsa.edu
Week 9				Dr. Manjeet Rao raom@uthscsa.edu
Week 10				
Week 11				
Week 12				

Week 13				
Week 14				
Week 15				
Week 16				
Week 17				