

**CSBL 5024
Genomics**

Spring 2017

CLASS DAYS and TIME: Monday, Wednesday, & Friday, 8:30 am-9:50 am

CLASSROOM: ALTC 2.211

COURSE FACULTY: Luiz O. Penalva, Ph.D.

OFFICE LOCATION and HOURS: Contact Dr. Penalva and other instructors by e-mail to schedule an appointment

EMAIL: penalva@uthscsa.edu

TELEPHONE: 210-562-9049

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

COURSE DESCRIPTION AND OBJECTIVES

This course covers historical aspects of the Genomic project and high throughput methods (microarray, SAGE, proteomics, etc.) to perform global analysis of gene expression; the course also provides an overview of new biological fields such as systems biology, functional genomics, and comparative genomics. The students will have the opportunity to become familiarized with tools, methods, databases, and approaches used to extract biological information from global analyses. Hands-on training on biological databases and classes covering examples of the use of genomics to answer questions related to cancer and diseases is an important part of the course, helping the students to visualize how genomics can be used in their own research projects.

Pre-requisites – List any pre-requisites for the course

Semester credit hours – 1 Semester Credit Hour

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

Students should finish the course with a general understanding of genomic methods available and how to employ them in their own research. Have an idea of databases and how to use basic bioinformatics tools.

COURSE ORGANIZATION

The main teaching modalities used in this course include:

- 1) Lectures**
- 2) Journal Clubs**
- 3) Presentations**

Materials – Bring your laptop to all lectures.

Computer Access –Wireless

Reading Assignments – Papers will be passed to students at least a week before JCs.

ATTENDANCE

Required for all lectures.

TEXTBOOKS

Required: N/A

Recommended: Papers will be passed to students at least a week before JCs.

GRADING POLICIES AND EXAMINATION PROCEDURES

Presentation and participation in Journal Clubs and discussion, Final Project. No formal exam.

Grading System

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

As a matter of University Policy, official communications between students and faculty occur using the student's university assigned "livemail" email address. Students are expected to check their university email on a daily basis. Missed communication due to inadequate monitoring of university email is not a valid excuse for failing to perform expected activities. Students are welcome to email the instructors at any time.

USE OF RECORDING DEVICES

Prior approval from the presenter is required before use of recording devices.

ELECTRONIC DEVICES

Cell phones shall not be used during class (unless requested to do so by the instructors). Use of social media or email via any devices is not allowed during class.

TENTATIVE CLASS SCHEDULE

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Genomics

Spring 2017

WEEK	DATE	TOPIC	Instructor	Room
Week 1	2/8/17	Intro and Databanks 1	Luiz Penalva and Mark Kos	ALTC 2.211
	2/10/17	Databanks 2	Mark Kos	ALTC 2.211
Week 2	2/13/17	Deep Sequencing	Melanie Carless	ALTC 2.211
	2/15/17	SNP Analysis	Karin Haack	ALTC 2.211
	2/17/17	Genomics and Diseases (Journal Club)	Melanie Carless	ALTC 2.211
Week 3	2/22/17	Single Cell Sequencing	Nameer Kirma	ALTC 2.211
	2/24/17	Regulatory elements in the DNA (Journal Club)	Luiz Penalva	ALTC 2.211
Week 4	2/27/17	Regulatory elements in the RNA	Luiz Penalva	ALTC 2.211
	3/1/17	ncRNAs	Alex Pertsemliadis	ALTC 2.211
	3/3/17	Network Analysis	Jianhua Ruan	ALTC 2.211
Week 5	3/6/17	Epigenomics (Journal Club)	Manjeet Rao	ALTC 2.211
	3/8/17	Student presentation – Genomics in diseases diagnosis, prognosis and therapy decision	Luiz Penalva	ALTC 2.211
	3/10/17	Proteomics	Michael Oliver	ALTC 2.211
Week 6	3/20/17	Student Project Presentation	Luiz Penalva	ALTC 2.211
Week 7				
Week 8				
Week 9				
Week 10				
Week 11				
Week 12				
Week 13				
Week 14				
Week 15				
Week 16				

Week 17				