

Course Syllabus

Course Information

BIOL3315, Epigenetics – Undergraduate course
TR 10:00AM - 11:15AM, CB1.222

Professor Contact Information

Tae Hoon Kim, 972-883-6496, genome@utdallas.edu
Office hours: by appointment

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

Advanced knowledge of molecular biology is essential. Understanding of genetics and genetic analysis is strongly recommended.

Course Description

Almost all cell types in our body share the same genetic information, but they perform very distinct functions. For example, our nerve cells are morphologically and functionally distinct from our muscle cells. How can the same genome give rise to hundreds of distinct cell types in our body? How can different diseases affect identical twins sharing the same genetic information? Why our parents and grandparents' diet and health may have lasting influences on our own health? The field of epigenetics emerged over the past decades to tackle these fundamental questions that intersect our genome, development, environment and disease. The course will provide a broad overview of epigenetic phenomena and epigenetic mechanisms with weekly lectures and small group discussions of primary literature. The course will introduce students to seminal works in epigenetics and recent developments with the goal of instilling critical knowledge of the field.

Student Learning Objectives/Outcomes

Students will have a broad knowledge of emerging field of epigenetics and its relevance in health and environment. Students will be able to critically evaluate new reported findings in epigenetics and epigenomics and to design experimental approaches to address critical problems in epigenetics and epigenomics.

Required Textbooks and Materials

No textbooks.

The reading material will be from recent primary literature (research articles, commentaries and reviews). The reading assignments will be posted a week before discussion session devoted for that topic.

Suggested Course Materials

Course materials will be primary research articles.

Assignments & Academic Calendar

(Topics, Reading Assignments, Due Dates, Exam Dates)

There will be weekly reading assignments. One article per week will be assigned. Participation in discussion session requires completion of reading assignment. Participation accounts for 10% of the final grade.

There will be 2 paper summary assignments. These writing assignments are for the research articles that are assigned. These paper summaries will be graded and account for 30% of the final grade.

There will be 2 problem sets to be completed independently by the student. Students will be asked to design experiments and interpret presented experimental data. These will account for 30% of the final grade.

There will be 2 take home exams to be completed independently by the student. Students will be asked various questions from the assigned reading and lectures. These will account for 30% of the final grade.

One lowest scoring exam, problem set or paper summary will be dismissed for calculation of the final grade.

Grading Policy

Final grade is assessed based on student's performances on take 2 home exams, 2 paper summaries, 2 problem sets and discussion participation, accounting 30%, 30%, 30% and 10% respectively of the final grade.

The final letter grade will be assigned based on the following schedule:

100-90% of maximum possible score is equivalent to A

89-80% of maximum possible score is equivalent to B

79-65% of maximum possible score is equivalent to C

64-50% of maximum possible score is equivalent to D

<49% of maximum possible score is equivalent to F

Course & Instructor Policies

(make-up exams, extra credit, late work, special assignments, class attendance, classroom citizenship, etc.)

Regular and punctual attendance is expected of students. Although no explicit attendance will be taken, the students will be evaluated by their participation in discussion sessions. Therefore, students are strongly encouraged to attend all lectures and discussions.

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.