Genomics and Society (BIOL 4301) - Spring 2018

Synopsis	The relatively new science of Genomics has tremendous implications regarding how we live our lives. Genomics impacts human health, law, agriculture, and even entertainment. A basic understanding if the science of Genomics and its techniques and products is vital if one is to participate in modern society. This course will provide students with a basic understanding of the concepts underlying Genomics and provide opportunities for them to critically think about the implications of this growing field of study.
Meeting times and place	M/W/F 10:00 am - 10:50 in Biology 21. You are expected to attend all class meetings. Failure to attend will be detrimental to your grade.
Professor	Dr. David A Ray, ESB 206, 806-834-1677, david.a.ray@ttu.edu Office hours: M/T/W (3:00-4:00)
Website	http://www.davidraylab.com
Reading materials	No current and comprehensive text on Genomics and its impacts on modern society exists. Readings will be assigned by the instructor as needed.
Course format	Each class will be a combination of various techniques designed to engage students in meaningful discussion and increased understanding of the topics. Class procedures will consist of lectures, guest speakers, short writing assignments, informal discussion of current events and popular culture depictions of genome science, debates, etc.
Exams and other assignments	Exams. Students will have two exams. Each exam will be a mixture of question types that include multiple choice, matching, short answer, essays, etc. Exams may be take-home. In-class assignments. Many class periods will begin with in-class writing assignments. These will consist of scenarios or news articles and critical thought questions that will be discussed as a class. Students will be asked to discuss their responses to the assignment with the class. These will be scored based on the students' demonstration of an understanding of the science and its implications in each case. Current events. Genomics is becoming a topic of discussion in everyday life. As the semester proceeds, each student is required to bring to class at least four examples of news items or examples popular culture that are related to Genomics throughout the semester. Students will present two of these to the class. These examples will be accepted as links to news articles or reports, references in popular television shows, etc. To avoid all the current events piling up at the end of the semester, a limit of no more than two in-class presentations are allowed per class. These will be scheduled first come, first served. If you make it to the last few days of class and others submit their CEs before you, you may not be able to present and will not get full credit. Debates. Students will be assigned to groups and assigned topics for in-class debates. Details on debate formats and topics will be discussed separately. Student presentations. Pairs of students will be assigned to present a series of complex topics to the class. Format and evaluations will be discussed separately.
Evacuation plan	In the event of an emergency, leave the classroom in an orderly manner. Leave the building through the nearest outside door and quickly move as far away as possible. Do not gather near building or parking lots.
Religious Holidays	Students who intend to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent for the observance of a religious holy day shall be allowed to take an exam or complete an assignment scheduled for that day within a reasonable time after the absence.
Honor Statement	Dishonesty on tests, quizzes, written work, or connected with your attendance in lab or lecture will have serious consequences. Students are expected to be aware of, and abide by, the University's Honor code. Plagiarism on written lab reports or essays (copying/paraphrasing from other students or from other sources without giving due credit) will result in the loss of all points for that exercise, at the very least.

Missing Exams	Illness or injury, family emergencies, certain University-approved curricular and extra-curricular activities, and religious holidays can be legitimate reasons to be excused from a scheduled examination. In the case of illness or injury, confirmation from a physician, physician's assistant, a nurse-practitioner, or a nurse is required. Barring extraordinary circumstances, confirmation must be presented prior to the missed exam. With regard to family emergencies, you must provide verifiable documentation of the emergency. Unless the emergency is critical you should notify the instructor in advance. In cases of critical emergencies, you must notify the instructor within one week of your absence. For University-approved curricular and extracurricular activities, verifiable documentation must be presented to the instructor at least one week prior to the first absence. In the case of religious holidays, notify the instructor in writing of any potential conflicts in the first three weeks of class. See OP 34.19 (http://www.depts.ttu.edu/opmanual/op34.19.pdf) for details.
Topics	The following topics will be discussed. This is a general idea. As the semester progresses, various topics may be rearranged, added or deleted as the needs of the class are assessed and/or topics are suggested by current events or students in the class. Genome structure Genome sequencing and assembly Genetics and Bioethics Genome variation Genome manipulation Genetic testing Forensic genomics Agricultural genomics Medical genomics Genomics and the law Course materials prepared by the instructor, together with the content of all lectures and review sessions presented by the instructor are the property of the instructor. Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited. Unless explicit permission is obtained from the instructor, recordings of lectures and review sessions may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.
Grading	Each exam will be worth 1/5 of the student's grade. The remaining 3/5 of each student's grade will be derived from in-class exercises and debates. Final averages will be calculated as a percentage of the available points (Only a single letter grade will be issued). Letter grades will be determined as: **A** (90-100%), **B** (80-89%), **C** (70-79%), **D** (60-69%), **F** (≤60%) Grade will be calculated based on the following weighting scheme: Exams – 20% each for a total of 40% of your grade In-class writing assignments and discussion – 20% Debates – 20% Student presentations – 20% Current events – 10%
ADA Statement	Any student who, because of a disability, may require special arrangements to meet the course requirements should contact the instructor as possible to make necessary arrangements. Students must present appropriate verification from Student Disability Services during the instructor's office hours. Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact Student Disability Services office in 335 West Hall or call 806-742-2405.
Controversy	Some topics of this course may be controversial and raise ethical questions for individuals and society. The topics will be discussed primarily from a scientific perspective. However, at times persons in the class may express opinions that differ from your own. During those times, all persons should be respectful in their discussions with other members of the class. If you consider a topic too disturbing, you may consider excusing yourself (with the instructor's consent) with no negative repercussions.

Important Dates	January 19, 2018 – First day of class January 29, 2018 – Debate teams and topics chosen February 23, 2018 – Debate Briefs and Annotated Bibliographies due February 22, 2018 – Dr. Ray in Santa Fe, Guest lecturer February 24, 2018 – Dr. Ray in Santa Fe, No class February 27, 2018 – Dr. Ray in Santa Fe, Guest lecturer March 9, 2018 – Exam 1 March 12, 2018 – Spring Break, No class March 14, 2018 – Spring Break, No class March 16, 2018 – Spring Break, No class ~~March 21, 2018 – Debate #1, GMOs~~ March 23, 2018 – Debate #2, Genetic information ~~March 26, 2018 – Debate #3, GM humans~~ March 28, 2018 – Debate #4, DNA database April 2, 2018 – No class May 7, 2018 – Last day of class May 14, 2018, 1:30 pm – Final exam