

Course: BTEC 5001. Metagenomics: Principles and Applications

Time: MTWTh 2:00-4:50

Place: Online Instruction- Blackboard and Zoom platforms.

Instructor: Mohamed Fokar PhD
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Description: This course will introduce students to techniques of metagenomics and metabarcoding. Students successfully completing this course will develop an in depth understanding of metagenomic and metabarcoding in studying the biodiversity, ecology of different microbial communities , and DNA-based identification using NGS sequencing.

Learning Outcomes:

1. Demonstrate how to design a metagenomics experiment.
2. Describe the standard methods of DNA extraction and quality control.
3. Describe the standard methods of generating sequencing libraries for Illumina platform.
4. Perform read mapping to reference databases.
5. Determine community composition at the taxonomical and functional levels.

Methods of assessment of learning outcomes: Learning outcome will be assessed through online assignments, participation and a final exam.

Participation/presentation: 50%

Final exam: 50%

Attendance:

Lectures will include information that is not in the assigned reading or handouts. It is therefore necessary and expected that you will attend and participate in every scheduled online lecture. There are no makeup classes. If there is a reason for missing a class you must contact your instructor as soon as possible to make necessary arrangements to discuss the outcome of the absence. You may need to provide a note from your physician excusing your absence if you are absent from a class or a lab more than a day due to an illness.

Student Accessibility: OP 34.22: Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office in 335 West Hall or 806-742-2405.

Academic Integrity: It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and a high standard of integrity. The attempt of students to present as their

own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension. "Scholastic dishonesty" includes, but not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student or the attempt to commit such and act.

Cheating: Dishonesty in examinations, quizzes, or homework assignments, illegal possession of examinations, the use of unauthorized notes during an examination or quiz, obtaining information during an examination from the examination paper or otherwise from another student, assisting others to cheat, alteration of grade records, illegal entry to or unauthorized presence in an office are instances of cheating.

Plagiarism: Offering the work of another as one's own, without proper acknowledgement, is plagiarism; therefore any student who fails to give credit for quotations or an essentially identical expression of material taken from books, encyclopedias, magazines, internet web sites, and other reference works, or from the themes, reports or other writings of a fellow student is guilty of plagiarism.

Civility in the Classroom: Students are expected to assist in maintaining a classroom environment that is conducive to learning. In order to ensure that all students have an opportunity to gain from time spent in class, unless otherwise approved by the instructor students are prohibited from using cellular phones or beepers or engage in any other form of distraction. Inappropriate behavior in the class room will result in a request to leave the class.

Religious Holy Day: By OP 34.19, a student who intends 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 from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence

TTU Resources for Discrimination, Harassment, and Sexual Violence

Texas Tech University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from gender and/or sex discrimination of any kind. Sexual assault, discrimination, harassment, and other Title IX violations are not tolerated by the University. Report any incidents to the *Office for Student Rights & Resolution*, (806)-742-SAFE (7233) or file a report online at titleix.ttu.edu/students. Faculty and staff members at TTU are committed to connecting you to resources on campus. Some of these available resources are: **TTU Student Counseling Center**, 806-742-3674, <https://www.depts.ttu.edu/scc/> (*Provides confidential support on campus.*) **TTU Student Counseling Center 24-hour Helpline**, 806-742-5555, (*Assists students who are experiencing a mental health or interpersonal violence crisis. If you call the helpline, you will speak with a mental health counselor.*) **Voice of Hope Lubbock Rape Crisis Center**, 806-763-7273, voiceofhopelubbock.org (*24-hour hotline that provides support for survivors of sexual violence.*) **The Risk, Intervention, Safety and Education (RISE) Office**, 806-742-2110, rise.ttu.edu (*Provides a range of resources and support options focused on prevention education and student wellness.*) **Texas Tech Police Department**, 806-742-3931, <http://www.depts.ttu.edu/ttpd/> (*To report criminal activity that occurs on or near Texas Tech campus.*)