BIOT 5140 **Emerging Techniques** **Credit Hours: 1**

Semester: Fall **Year:** 2024
Class Day/Time: Mondays 10 – 11:30 AM **Class Location:** BMR Room 12.1

Instructor of Record: Dr. Pierre Neuenschwander
Office: BMR Rm 107.2
Office Phone: 903-877-7593
E-Mail: Pierre.Neuenschwander@uthct.edu
Office Hours: Any time by appointment.

Prerequisite: None **Co-requisite:** None

Goals of Course & Course Objectives:

1. To develop the ability to investigate new technologies and techniques and evaluate their usefulness.
2. To present current topics in biotechnology.
3. To find and process scientific information.
4. To hone skills in scientific communication (written and oral).

Student Learning Outcomes *(Course Competencies):*

1. The student will demonstrate the ability to research and evaluate new and emerging technologies/techniques used in biomedical research.
2. The student will demonstrate the ability to find and understand pertinent scientific information.
3. The student will demonstrate the ability to write scientifically and technically.
4. The student will demonstrate the ability to prepare and effectively deliver oral presentations.

Course Assessment/Methods of Evaluation:

- Selection of technique (10%)
- List of potential sources (10%)
- Outline of paper (10%)
- First draft of paper (10%)
- Slide deck draft (10%)
- Final paper (25%)
- Oral presentation (25%)

Any grade below B is unacceptable for graduate school and may be considered an academic deficit.

Linked Program Learning Outcomes:
The student learning outcomes listed above address the following Biotechnology Program PLOs:

- PLO-1. The student will demonstrate English communication skills in both oral and written forms.
- PLO-4. The student will demonstrate independent and critical thinking skills integrated with the ability to utilize multiple informational resources.

Textbook: None

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Course Content:

Week (Date)	Topic	Related Assignment	Due date
Week 1 (Aug 26)	Module 1 – Introduction – Sources for selecting a technology.	Start work on identifying and selecting a technology or technique.	
Week 2 (Sept 2)	Module 2 – Selecting a technology. SELF-STUDY (no class) *One-on-one meetings.*	Continue work on identifying and selecting a technology or technique.	
Week 3 (Sept 9)	Module 2 – Selecting a technology. SELF-STUDY (no class) *One-on-one meetings.*	Selection of your technology or technique. *Submit paper selection(s) on Canvas.*	Friday Sept 13
Week 4 (Sept 16)	Module 3 – Preparing your Abstract. Review format etc.	Prepare your abstract.	
Week 5 (Sept 23)	Module 4 – Preparing your Outline. Review format etc.	Prepare your outline. *Submit abstract on Canvas.*	Friday Sept 27
Week 6 (Sept 30)	Module 5 – Preparing your Paper. Review format etc.	Start working on your paper (build-out your outline). *Submit outline on Canvas.*	Friday Oct 4
Week 7 (Oct 7)	Module 5 – Preparing your Paper. SELF-STUDY (no class) *One-on-one meetings.*	Continue working on your paper.	
Week 8 (Oct 14)	Module 5 – Preparing your Paper. SELF-STUDY (no class) *One-on-one meetings.*	Continue working on your paper. *Submit first-draft on Canvas.*	Friday Oct 18
Week 9 (Oct 21)	Module 5 – Preparing your Paper. SELF-STUDY (no class) *One-on-one meetings.*	Continue working on your paper. Incorporate edits and address feedback.	
Week 10 (Oct 28)	Module 5 – Preparing your Paper. SELF-STUDY (no class) *One-on-one meetings.*	Continue working on your paper. Incorporate edits and address feedback.	
Week 11 (Nov 4)	Module 6 – Preparing your Presentation. Review format etc.	Continue working on your paper and start preparing starter slide deck-outline.	
Week 12 (Nov 11)	Module 6 – Preparing your Presentation. SELF-STUDY (no class) *One-on-one meetings.*	Continue working on your slide deck. *Submit starter slide deck on Canvas.*	Friday Nov 15
Week 13 (Nov 18)	Module 6 – Preparing your Presentation. SELF-STUDY (no class) *One-on-one meetings.*	Continue working on your slide deck. Incorporate edits and address feedback. *Submit Final Paper on Canvas.*	Friday Nov 22
Week 14 (Nov 25)	THANKSGIVING BREAK – no class.		
Week 15 (Dec 2)	Begin presentations.	*Submit Final Presentation slides on Canvas.*	**Sunday Dec 1**
Week 16 (Dec 9)	Continuing presentations. FINALS WEEK.		

Bold weeks – In-person class meetings.
Blue weeks – Self-study weeks. One-on-one meetings can be scheduled.
Red font – Submissions and due dates.

Other Class Policies:

Attendance:

Regular and punctual attendance is expected. If a student misses a class or lab, the student is responsible for obtaining any information distributed during those times. Make-ups are possible only under certain instances (labs cannot be made up). Arrangements for any make-ups and/or missed labs should be discussed directly with the instructor for that day's class.

Students are expected to attend all classes. Students will be allowed to miss **1 class** without penalty. Additional absences will be handled as follows:

2 absences	Lose 5% of overall grade in class
3 absences	Lose 10% of overall grade in class
4 absences	Lose 15% of overall grade in class
5+ absences	Student will have to remediate the course

Students will be considered absent if they arrive more than **30 minutes** after the start of class.

Emergencies

In the event of an emergency or sickness, the student **MUST** contact their PI and/or the Program Coordinator (Mr. Yonatan Moya) by phone or email **THE DAY OF** the expected absence. Failure to do so will result in the absence being counted as 2 absences, resulting in a 10% decrease in the class grade.

Academic Honesty:

Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic 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 examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Cheating

Dishonesty of any kind involving examinations, assignments, alteration of records, wrongful possession of examinations, and unpermitted submission of duplicate papers for multiple classes or unauthorized use of keys to examinations is considered cheating. Cheating includes but is not limited to:

- Using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class.
- Falsifying or inventing any information, including citations, on an assigned exercise.
- Helping or attempting to help another in an act of cheating or plagiarism.

Plagiarism

Plagiarism is presenting the words or ideas of another person as if they were your own. Materials, even ideas, borrowed from others necessitate full and complete acknowledgment of the original authors. Offering the work of another as one's own is plagiarism and is unacceptable in the academic community. A lack of adequate recognition constitutes plagiarism, whether it utilizes a few sentences, whole paragraphs, articles, books, audio-visual materials, or even the writing of a fellow student. In addition, the presentation of material gathered, assembled or formatted by others as one's own is also plagiarism. Because the university takes such misconduct very seriously, the student is urged to carefully read university policy Sec. 8-802. Academic Dishonesty. Examples of plagiarism are:

- Submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another.
- Submitting a work that has been purchased or otherwise obtained from an Internet source or another source.
- Incorporating the words or ideas of an author into one's paper without giving the author due credit.

AI (Artificial Intelligence) Policy:

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or

copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

Use of AI is not permitted in this course at all.

To best support your learning, you must complete all graded assignments by yourself to assist in your learning. Doing your own work, without human or artificial intelligence assistance, is best for your efforts in mastering course learning objectives. This exclusion of other resources to help complete assignments includes artificial intelligence (AI). Refrain from using AI tools to generate any course context (e.g., text, video, audio, images, code, etc.) for any assignment or classroom assignment.

Adding/Dropping:

The official deadline for adding and dropping courses is as published in the academic calendar (Registrar Withdrawal webpage). However, students are strongly encouraged to meet with their graduate advisor or the Program Coordinator prior to adding/dropping courses. Movement into and out of classes after the 4th class day requires approval of the Program Director. Each student is responsible for their own enrollment status with the university.

Disability Accommodations:

UT Tyler HSC abides by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, which mandate reasonable accommodations be provided for students with documented disabilities. If you have a disability and may require some type of instructional and/or examination accommodations, please contact me early in the semester so that I can provide or facilitate the provision of accommodations you may need. If you have not already done so, you will need to register with the Student Services Office (located on the main campus). You may call 903-566-7079 for more information.

A listing and description of all student policies can be found here: Manual of Policies and Procedures for Student Affairs.

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MARKETABLE SKILLS FOR YOUR CV/RESUME

Program:	Master of Science in Biotechnology
Degree:	MS
Department:	Cellular and Molecular Biology
School:	Medical Biological Sciences
Course:	**BIOT5140 – Emerging Technologies**

Area	Marketable Skill*
SKILLS	**Reading Comprehension** — Understanding written sentences and paragraphs in work-related documents.
	Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.
	Writing — Communicating effectively in writing as appropriate for the needs of the audience.
ABILITIES	**Written Comprehension** — The ability to read and understand information and ideas presented in writing.
	Oral Comprehension — The ability to listen to and understand information and ideas presented through spoken words and sentences.
	Inductive Reasoning — The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
	Oral Expression — The ability to communicate information and ideas in speaking so others will understand.
	Written Expression — The ability to communicate information and ideas in writing so others will understand.
WORK ACTIVITIES	**Analyzing Data or Information** — Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
	Updating and Using Relevant Knowledge — Keeping up-to-date technically and applying new knowledge to your job.
	Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources.

*All marketable skills listed for this course and program were drawn from the Knowledge, Skills, and Abilities identified by the US Department of Labor and Statistics for “Biological Technicians” and “Molecular and Cellular Biologists” as published on O*Net Online (www.onetonline.org)