MICR 2330: Microorganisms and Disease
Fall 2024 CRN: 12855
Tuesday and Thursday, 10:30 am to 11:50 am in PSCI 208

Unofficial Course Description:

MICR 2330 is one of two introductory courses in Microbiology at UTEP. Both provide an overview of the structure, physiology and molecular biology of microorganisms such as viruses, bacteria, fungi, and protists. This course (MICR 2330) is meant to be a stand-alone course for students in medically related majors, such as Nursing, for which this may be the only microbiology the course they take. Throughout the course, there is a strong focus on those microorganisms that cause disease in humans. The other introductory micro course (MICR 2340) focuses on providing a strong, general scientific foundation for additional, advanced microbiology courses offered at UTEP. If your career goals include advanced degrees in molecular or microbiology research, or if you intend to apply to medical school, please talk with me or your advisor as soon as possible to make sure you are in the correct course.

Student Learning Objectives:

The Successful student will be able to:

1). Identify the commonalities and differences among microorganisms and humans (eukaryotes) in:
- **a). Structure.**
- **b). Physiology.**
- **c). Molecular Biology.**

2). Explain how those difference impact our ability to:
- **a). Diagnose infectious agents of disease.**
- **b). Design and treat infections with targeted drugs (e.g., antibiotics).**
- **c). Stimulate general and specific immune responses against the infectious agent.**

3). Describe the overall balance of microbes and host in specific examples of infectious diseases in humans.

Who is the Course Professor?

Dr. Stephen Aley is a molecular biologist and biochemist specializing in research on infectious disease. His past microbiology research centered on human parasitic protists that are the cause of diseases such as amoebic dysentery, malaria, sleeping sickness, toxoplasma, Chagas disease, and giardiasis. He has been "away", as they say in Australia, but this year he is back in his primordial haunt in Biology 303, near one of the doors to the walkway between Biology and the Classroom building. He is most reliably contacted by email (saley@utep.edu), and he has regular office hours, generally from 1-2 pm on each Tuesday and Thursday after class (exceptions will be posted in advance on BlackBoard). There is a rumor that he has resurrected an old candy dispenser and that it is stocked with Hershey's chocolate instead of sugar free candies, but please don't tell his wife. Don't worry – he doesn't normally talk about himself in the third person.

Do I have to come to class?

This is an In-Person class, meeting **Tuesday and Thursday from 10:30 am to noon** in **Physical Sciences (PSCI) 208**. The class will use **Nester's Microbiology 10th Edition** (McGraw Hill) as the supporting textbook, and I will post materials on the course **Blackboard** site. However, it is through discussions and interactions in the classroom that you will best understand the role of basic microbiology knowledge in the context of disease and preservation. Also, please note that class participation is part of the grade assessment for the course, and all exams will be in-person in the classroom.

What do I need to bring to class?

In addition to something to take notes, you will need to bring to the class a **"neanderthal clicker"** (Provided in the first class and posted on Blackboard. You may print as many copies as you like, but you can use the same one for each class!), a **3" x 5" index card** (new for each class!), and a pencil or pen to complete and turn in any in-class assessments. On exam days you will need a GREEN Scantron and a pencil (or two). Finally, please bring an open mind and a willingness to participate.

How do I communicate with the Professor?

1. My office Hours are generally from 1-2 on Tuesday and Thursday. Exceptions will be posted on BlackBoard. If you need an alternative time for a meeting, please reach out using EMAIL for us to work out a mutually agreeable time for in person or MS Teams meeting.
2. Outside of office hours, the best way to reach me is by Email: saley@utep.edu When you do reach out, please use your UTEP EMAIL address and start the subject line with "**MOD2330:**". I will respond or acknowledge as soon as reasonably possible, but always within 24 hours. Know that emails from unknown, non-UTEP addresses (e.g., BeyonceFan237) will be discarded without reading. Likewise, I will not respond to BlackBoard Messager, Teams Chat, or social media invitations.

How will the Professor communicate with me?

You are required to regularly check both your **UTEP EMAIL** and the **Blackboard course site**! The course will be primarily coordinated through a **Blackboard Ultra** course site, available through your logon to "my.utep.edu". Any modifications to the course schedule or procedures will be announced in advance on Blackboard. This site is also the **primary source** of the most current reading assignments, homework assignments, and other handouts (including a copy of this syllabus and the Neanderthal clicker), and course calendar. , and copies of the basic slides used in lectures. Blackboard will also be used for pre-class quizzes (see assessments, below), and, following lectures, I will post a pdf of the main slides from the previous class. Also, all assessment and course grades will be presented through Blackboard. My assumption is that all students in the class are reasonably familiar with Blackboard from previous classes. If that is not the case, please see me in office hours as soon as possible to make sure you know how to access course materials.

Assessments and Grades:

This course uses a range of formative and summative assessments, detailed below, to provide feedback to both students and professor. Percentage scores for each component (pre-class quizzes, in-class assignments, homework, section exams (3), and final exam) will be combined to determine the letter grade assigned to the course.

Pre-Class Quizzes on assigned reading (10%)

For each class with a reading assignment, students are expected to have completed the reading AND have taken a short quiz on Blackboard the day before the class in question (e.g., due before 11:59 pm the day before class). These quizzes are meant to check initial understanding of the reading, and the questions will be simpler than examination questions on the same topic. For these quizzes (only), you may use your textbook during the quiz (open book quiz). Some quizzes may allow for multiple attempts. In those cases, the last attempt (not necessarily the highest score!) will be the score recorded for the assignment.

In-Class participation, exercises, and assessments (20%).

Participation in class is expected and periodically assessed. Assessments can be formative, such as through the 'neanderthal clicker' attached to this syllabus, or summative, collected during class.

Homework Assignments (20%)

Written homework projects or questions will be assigned as needed. Details of the assignment will be posted in BlackBoard and all associated materials should be submitted through Blackboard.

Section Exams (three at 10% each)

Three 'Section Exams' will be given during class periods, as scheduled on the course calendar. These exams will concentrate on recent material (e.g., subsequent to the last examination), BUT MAY CONTAIN

QUESTIONS ON ANY MATERIAL COVERED TO DATE (e.g., “be comprehensive”). Exam will be on scantron, at least until you as a class persuade me there is a better approach, with each student responsible for providing their own scantrons and pencils.

Final Examination (20%)
The final examination for the course will be given at the final exam time and place scheduled by the registrar for this class period: December 12, 2024, at 10:00 am to 12:45 am in PSCI 208 (usual classroom). Details of the exam mechanism (e.g., could require two scantron sheets or might move to a blackboard exam) will be provided closer to the exam date.

Course Grade:
The course grade will be calculated by the weighted average of the percentage scores of the components above (e.g., percentage score on “in-class assignments” will be weighted as 20% of the course grade.) Letter grades will be assigned as follows:

90% to 100%	→	A
80% to <90%	→	B
70% to <80%	→	C
60% to <70%	→	D
<60%	→	F

The instructor reserves the right to make ranges or components less stringent, at his discretion, provided the revisions apply to the class as a whole.

COURSE POLICIES

PHONE USE, HEADPHONES, EARBUDS, SMART WATCHES OR OTHER ELECTRONICS IN CLASSROOM

Use of cell phones, headphones, earbuds, ipods, or other electronics, not specifically part of the class presentation, are a distraction to the class and should not be used at any time during a class. On Exam days, all such electronics must be fully turned off and stored away from easy access. If you have special circumstances, talk to the professor well before class time to work out accommodations.

NO MAKEUP EXAMINATIONS OR LATE WORK:

NO makeup exams or due date extensions will be given for any reason or circumstances other than those explicitly required by university policy. However, students will have the option of replacing one category of in-course assessment (Pre-class Quizzes, class participation, or homework OR one (1) of the section exams) with the percentage score of their final exam. Requests for such substitution must be made in writing at one of my office hours on or before the last day of class (note: this is BEFORE you take the final exam!).

WHOSE WORK IS IT:

For ALL ASSIGNMENTS and PROJECTS, you are to ASSUME that all work is to be done by the INDIVIDUAL student whose name is on the cover page unless the WRITTEN instructions specifically state otherwise. When teams are allowed and used, ALL PARTICIPATING TEAM MEMBERS must be listed on the cover page of the assignment, including the specific contributions of each team member. When outside work is included in the submission, the source must be clearly credited. All written reports must cite sources in the format of a standard Scientific Journal (your choice!). To do otherwise is academically dishonest and will not be tolerated.

Generative AI and LLM (such as ChatGPT) are new technologies that can be easily abused. Presenting as your own work any materials generated by these technologies without attribution is academically dishonest (and, btw, often factually incorrect). The National Institutes of Health totally bar researchers from using GenAI or LLM and any submissions to the institutes. The National Science Foundation does allow some flexibility, but they require explicit annotation of generated text in any document. Personally, I see some value in using GenAI or LLM to create an initial structure or draft document as a first step, knowing that the document will require significant revision and fact checking before it is suitable for submission or publication. In that spirit I propose an experimental option for those of you that want to try out such resources. For HomeWork assignments (ONLY) for this class/professor/semester (ONLY), I will accept for credit written assignments that have been partly supported by GenAI or LLM or similar tools with the following FOUR INCLUSIONS:

1. A cover page that states the AI or LLM type and version that was used.
2. A page (or more, if needed) that contains the entire prompt used. (If iterative prompts were used, only include the final prompt.)
3. A complete copy of the unedited text generated by the prompt.
4. A Microsoft Word "TRACK-CHANGES" document that shows your edits from the machine generated text to your final version of the document.

Grade for the assignment will be based on your contributions, including in particular the design of the prompt that was used, the quality of the revision and tailoring of the output, and the care taken to ensure accuracy and proper attribution. To reiterate – this is an optional, not a required activity, and it applies only to homework assignments for the course/professor covered by this syllabus. Any other GenAI/LLM supported assignments in this class will be considered as academic dishonesty. If you have any questions, please come see me at my office hours.

CIVILITY AND PROFESSIONALISM IN THE CLASSROOM:

An effective classroom experience requires an atmosphere of respect for others and a willingness to listen to new ideas, and the instructor has primary responsibility for control of the classroom environment. In the case of rude or disruptive behaviors, the instructor can order the immediate removal or expulsion from the classroom of the offending person. Continued disruptive or threatening behavior may result in possible disciplinary action.

POLICY ON ACADEMIC HONESTY:

Academic Dishonesty will not be tolerated. All university guidelines will be strictly followed, and any suspected violations or suspicious behaviors will be referred to the Office of Community Standards (formerly OSCCR). Please read these guidelines carefully. If you have any questions regarding the university policy please contact the Dean of Students.

ACCOMODATIONS STATEMENT:

If a student has or suspects s/he has a disability and needs an accommodation, s/he should contact the Center for Accommodations and Support Services at 747-5148 or at <cass@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any CASS accommodation letters and instructions.

MENTAL HEALTH:

Balancing school, work, family, and life can be stressful, but it should never be hopeless. If you are ever feeling trapped or down, please reach out. You will be amazed at the amount of support that UTEP and the UTEP community can provide. If you want a sounding board about career and education options, remember that my office hours can address more than course requirements. For more serious concerns, the UTEP counseling services can provide professional counselors and referrals for any registered student – call the crisis line at 915-727-5302 or go to https://www.utep.edu/student-affairs/counsel/. To quote a wise friend of mine, "If you are thinking that maybe you ought to call, you should have called already!"

DROPPING A COURSE

November 1, 2024 (Thursday) IS THE LAST DAY STUDENTS MAY DROP THE CLASS WITH AN AUTOMATIC "W". Student-initiated drops are technically permitted after this date; however, it is course policy that any drops after this date will be assigned a grade of "F".

EXCESSIVE ABSENSES OR MISSED WORK:

UTEP Curriculum and Classroom policies allow an instructor to drop a student who, in the instructor's judgement, has been absent to such a degree as to impair their status relative to credit for the course. Such drops are assigned a “W” before the drop date and a grade of “F” after the drop date. Accordingly, starting two weeks prior to the drop date, the instructor will review absences and missing course work. For any students found to be seriously deficient, the instructor will send a warning through email of the pending course drop. If said students have not sent a responding email by one week before the Drop Date appealing the decision, the instructor will submit an instructor-initiated drop resulting in a “W” grade on the course transcript.

GRADE OF INCOMPLETE:

In the case of extraordinary circumstances impacting a limited part of the course (e.g., a missed exam or major project, an “incomplete” grade may be temporarily given. However, any such “I” grade must be accompanied by written contract, signed by student and instructor, that specifies the current grade (with no additional work), the maximum possible alternative grade, the required deliverables, and the new timeline.

<see schedule on next page>

COURSE SCHEDULE:

The Class Schedule below will be periodically updated with more details on the reading assignments. Any such changes will be announced both in class and on Blackboard. Note that for the days labeled "Case Studies – Infections" have deliberately been left unspecified. I have some flexibility as to which diseases are featured. If you have a particular infectious disease you would like to see presented as an example, please let me know!

Date	DOW	Lecture/Exam #	Title/Topic	Reading
8/27/24	Tue	Class 1	Course introductions and Overview	Syllabus
8/29/24	Thur	Class 2	Micro Universe and impacts	Ch 1
9/3/24	Tue	Class 3	Molecules of Life	Ch 2
9/5/24	Thur	Class 4	Molecules of Life Part II	Ch 2
9/10/24	Tue	Class 5	Basic structures of Cells	Ch 3
9/12/24	Thur	Class 6	Dynamics of Microbial Growth	Ch 4
9/17/24	Tue	Class 7	Dynamics of Microbial Growth	Ch 4
9/19/24	Thur	Class 8	Control of Microbial Growth	Ch 5
9/24/24	Tue	Exam 1	Exam 1	Ch 1-5
9/26/24	Thur	Class 9	Microbial Metabolism	Ch 6
10/1/24	Tue	Class 10	Microbial Metabolism	Ch 6
10/3/24	Thur	Class 11	Blueprint of Life	Ch 7
10/8/24	Tue	Class 12	Bacterial Genetics	Ch 8
10/10/24	Thur	Class 13	Bacterial Genetics	Ch 8
10/15/24	Tue	Class 14	Closer look at Diversity of Life	Ch 11
10/17/24	Thur	Class 15	Eukaryotic Members of Micro	Ch 12
10/22/24	Tue	Class 16	Viruses, Viroids, and Prions	Ch 13
10/24/24	Thur	Exam 2	Exam 2	CH 1-13
10/29/24	Tue	Class 17	Balance of MOs in Preservation and Disease	Ch 30
10/31/24	Thur	Class 18	Innate Immune Responses	Ch 14
11/5/24	Tue	Class 19	Adaptive Immune Response	Ch 15
11/7/24	Thur	Class 20	Adaptive Immune Response	Ch 15
11/12/24	Tue	Class 21	Host Microbe Interactions	Ch 16
11/14/24	Thur	Class 22	Antimicrobial Medications	Ch 20
11/19/24	Tue	Class 23	Case Studies - Infections	Ch 21-27
11/21/24	Thur	HOLIDAY	THANKSGIVING HOLIDAY	
11/26/24	Tue	Class 24	Case Studies - Infections	Ch 21-27
11/28/24	Thur	Class 25	Case Studies - Infections	Ch 21-27
12/3/24	Tue	Exam 3	Exam 3	Ch 1-27
12/5/24	Thur	Class 26	Case Studies - Infections	Ch 21-27
12/12/24	Thur	Final Exam	10 am to 12:45 pm	All of course