BIOL/BIOC 4501/5501: Bacterial Diversity and Physiology
Fall 2020   T ● REMOTE           R 12:30 – 1:50 pm ● LIFE A217

Professor: Dr. Calvin A. Henard

Contact Information:   Email: Calvin.Henard@unt.edu
                       Office: Science Research Building (SRB), Room 132
                       Office Phone: (940) 565-3280
                       Office Hours: Thursdays 2pm-3pm (or by scheduled appointment)

Course Description and Objectives: Comparative survey of bacteria. Growth, metabolism, energy
transformations, adaptive mechanisms, ecology, and role of bacteria (and other microbes) in
biogeochemical cycles.
The objectives of this course are to (i) provide a basic understanding of bacterial physiology, (ii) an
in-depth survey of the structure and metabolic diversity of bacteria, (iii) a framework for thinking
about microbial interactions in pathogenicity and ecology, and (iv) the benefits of bacterial diversity
to ecology, biotechnology and agriculture.

Course Pre-requisites, Co-requisites, and/or Other Restrictions: BIOL 1710 or BIOL
1711; BIOL 1720 or BIOL 1722; BIOL 1760 or BIOL 1761; BIOL 2041/BIOL 2042; CHEM 2370;
or consent of department.

Suggested Textbooks: The following are excellent resources for this course, but are not required:
Principles of Microbial Diversity by James W. Brown, ISBN 9781555814427
The Physiology and Biochemistry of Prokaryotes by David White et al., ISBN 019539304X

Course Organization: This course will be organized as a PARTIALLY REMOTE course. We
WILL NOT meet face-to-face on Tuesdays. Required reading materials and associated activities
will be uploaded to CANVAS prior to noon on Tuesday and should be completed prior to the
scheduled Thursday lecture. We WILL meet face-to-face in LSC A117 on Thursdays 12:30-1:50.

Remote Assignments: One of the primary goals of this course is to introduce you to reading and
evaluating primary scientific literature. To this end, I will be uploading review articles and/or primary
literature to CANVAS each week. Assignments (questions) related to these readings will be available
in CANVAS and are REQUIRED to be completed before class on Thursday.

Literature Review: During this course, you will review one primary literature study recently (>2015)
published in a scientific journal. The review should be no more than two pages (Times New Roman,
12pt font, single-spaced, 1 in margins) that includes an overview of the rationale for study, the central
hypothesis, main results and conclusions, and any potential flaws/alternatives you identified with the
authors results/conclusions. Grading will be based on a rubric including the aforementioned review
parts. The literature paper can be related to any topic we cover in class, but the paper must be
approved by me at least 2 weeks prior to the due date (approval by 10/29/20)-email me a link to
the paper for approval. If you do not receive approval from me, 10 pts will automatically be
deducted from the lit review grade.
Literature Review due Nov. 12, 2020 (must be uploaded to Canvas by 11:59pm)
**Exams:** There will be 2 take home exams that will consist of data interpretation and essay-style questions. Exams are due one week (see due dates in course schedule below) after they are distributed and must be uploaded to Canvas by 11:59pm on the due date. Exam responses will be checked for plagiarism using advanced detection software.

- **There will be no make-up exams** given the ample time given to complete the exam.
- Any student found cheating on any exam or assignment will receive a grade of zero (0) for that exam and may face other disciplinary action(s).
- **The exam dates are fixed and will not change;** however, the content included on each exam may be different than what is listed in the tentative course schedule. If there are changes to the topics covered on an exam, it will be announced in class and on Canvas.
- Students will have one week following the return of graded exams to raise concerns or dispute potential grading errors related to the exam. **After the one week period, the grade is set and can no longer be disputed.**

**Presentation:** Each student will prepare and present a 10 min powerpoint presentation describing a microbe (microbe list forthcoming), including cellular structure (microscopic images) and unique features of the microbe’s metabolism, ecology, virulence, and/or role in society or global processes. The presentations will be held remotely via zoom during the final weeks of the class. Student participation via questions/comments following individual presentation will be monitored and considered during final grading. Powerpoint presentations are due 48h prior to your scheduled presentation (upload to Canvas)-the presentation schedule will be decided randomly and posted to CANVAS early during the semester.

**Grading:**
Your final course grade will include two take home exam scores, one literature review, online assignments, and a presentation:

- Exams: 200pts
- Literature Review: 100pts
- Online Assignments: 100pt
- Final Presentation: 100pts

Grading will follow a standard scale:

- (448 – 500 points) A
- (398 – 447 points) B
- (348 – 397 points) C
- (298 – 347 points) D
- (< 297 points) F

**Attendance:** Due to COVID19 required social distancing, we will have assigned seating in LIFE A217. Attendance will be taken on Thursdays to aid in contact tracing should anyone in the class become ill with SARS-CoV-2, but attendance is not mandatory. **You do not need to email me if you can’t come to class.** However, if you do decide to attend face-to-face lectures, please do not be late! Laptop and tablet-style computers are allowed during class as long as they are being used appropriately (i.e., taking notes). You will be asked to put your device away if you are using it for something other than class. **Please make sure that your phone is on silent when class is in session.** You are not allowed to text, play games, or surf the web on your phone during lecture.
If you are experiencing any symptoms of COVID-19 (https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Hotline at 844-366-5892 or COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure. While attendance is an important part of succeeding in this class, your own health, and those of others in the community, is more important.

**Class Materials for Remote Instruction:** The UNT fall schedule requires this course to have fully remote instruction beginning November 28th. Additional remote instruction may be necessary if community health conditions change or you need to self-isolate or quarantine due to COVID-19. Students will need access to a webcam and microphone to participate in fully remote portions of the class. Information on how to be successful in a remote learning environment can be found at https://online.unt.edu/learn.

**Statement on Face Covering:** Face coverings are required in all UNT facilities. Students are expected to wear face coverings during this class. If you are unable to wear a face covering due to a disability, please contact the Office of Disability Access to request an accommodation. UNT face covering requirements are subject to change due to community health guidelines. Any changes will be communicated via the instructor.

**Course Technology & Skills:**

Minimum Technology Requirements:
- Computer
- Reliable internet access
- Speakers
- Microphone
- Plug-ins
- Microsoft Office Suite or other software to generate word document and presentation
- [Canvas Technical Requirements](https://clear.unt.edu/supported-technologies/canvas/requirements)

Computer Skills & Digital Literacy:
- Using Canvas
- Using email with attachments
- Downloading and installing software
- Using word document programs
- Using presentation and graphics programs

**Technical Assistance**

Part of working in the online environment involves dealing with the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

**UIT Help Desk:** [UIT Student Help Desk site](http://www.unt.edu/helpdesk/index.htm)
Email: helpdesk@unt.edu
Phone: 940-565-2324
In Person: Sage Hall, Room 130
Walk-In Availability: 8am-9pm
Telephone Availability:
- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm
Laptop Checkout: 8am-7pm

For additional support, visit Canvas Technical Help (https://community.canvaslms.com/docs/DOC-10554-4212710328)

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<td>Sept. 27</td>
<td>Cell Structure and Growth</td>
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<td>1/3</td>
<td>Thermodynamics revisited/catabolism</td>
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<td>8/10</td>
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<td>Oct. 1</td>
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<td>Metabolic pathway evolution/archaea</td>
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<td>Review Q&amp;A (Remote via Zoom)</td>
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Please note this schedule is tentative and subject to change by the instructor. Topics per day may vary, but exam dates are set and will not change. Exams are due one week after distribution (due date in bold; must be uploaded to Canvas by 11:59pm on due date)

UNT Policies
Academic Integrity Policy
Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. [Insert specific sanction or academic penalty for specific academic integrity violation.]

ADA Policy
UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one’s specific course needs. Students may request
accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (https://disability.unt.edu/).

Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)
The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

Emergency Notification & Procedures
UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

Retention of Student Records
Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student’s records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University’s policy. See UNT Policy 10.10, Records Management and Retention for additional information.

Acceptable Student Behavior
Student behavior that interferes with an instructor’s ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT’s Code of Student Conduct (https://deanofstudents.unt.edu/conduct) to learn more.

Access to Information - Eagle Connect
Students’ access point for business and academic services at UNT is located at: my.unt.edu. All official communication from the University will be delivered to a student’s Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail Eagle Connect (https://it.unt.edu/eagleconnect).

Student Evaluation Administration Dates
Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 [insert administration dates] of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website (http://spot.unt.edu/) or email spot@unt.edu.

Sexual Assault Prevention
UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and
the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT’s Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim’s compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation
To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the Electronic Code of Federal Regulations website (http://www.ecfr.gov/). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G). The paragraph reads:

(G) For F-1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F-1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

University of North Texas Compliance
To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course.

If such an on-campus activity is required, it is the student’s responsibility to do the following:

1. Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.
2. Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.

Student Verification
UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying students of any special meeting times/locations or additional charges associated with student identity verification in distance education courses.

See UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses (https://policy.unt.edu/policy/07-002).

Use of Student Work
A student owns the copyright for all work (e.g. software, photographs, reports, presentations, and email postings) he or she creates within a class and the University is not entitled to use any student work without the student’s permission unless all of the following criteria are met:
• The work is used only once.
• The work is not used in its entirety.
• Use of the work does not affect any potential profits from the work.
• The student is not identified.
• The work is identified as student work.

If the use of the work does not meet all of the above criteria, then the University office or department using the work must obtain the student’s written permission.

Download the UNT System Permission, Waiver and Release Form

Transmission and Recording of Student Images in Electronically-Delivered Courses

1. No permission is needed from a student for his or her image or voice to be transmitted live via videoconference or streaming media, but all students should be informed when courses are to be conducted using either method of delivery.

2. In the event an instructor records student presentations, he or she must obtain permission from the student using a signed release in order to use the recording for future classes in accordance with the Use of Student-Created Work guidelines above.

3. Instructors who video-record their class lectures with the intention of re-using some or all of recordings for future class offerings must notify students on the course syllabus if students’ images may appear on video. Instructors are also advised to provide accommodation for students who do not wish to appear in class recordings.

   Example: This course employs lecture capture technology to record class sessions. Students may occasionally appear on video. The lecture recordings will be available to you for study purposes and may also be reused in future course offerings.

No notification is needed if only audio and slide capture is used or if the video only records the instructor's image. However, the instructor is encouraged to let students know the recordings will be available to them for study purposes.

Class Recordings & Student Likenesses

Synchronous (live) sessions in this course will be recorded for students enrolled in this class section to refer to throughout the semester. Class recordings are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

Academic Support & Student Services

Student Support Services

Mental Health

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

• [Student Health and Wellness Center](https://studentaffairs.unt.edu/student-health-and-wellness-center)
• [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services)
• [UNT Care Team](https://studentaffairs.unt.edu/care)
• [UNT Psychiatric Services](https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry)
Individual Counseling (https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling)

Chosen Names
A chosen name is a name that a person goes by that may or may not match their legal name. If you have a chosen name that is different from your legal name and would like that to be used in class, please let the instructor know. Below is a list of resources for updating your chosen name at UNT.

- UNT Records
- UNT ID Card
- UNT Email Address
- Legal Name

*UNT euIDs cannot be changed at this time. The collaborating offices are working on a process to make this option accessible to UNT community members.

Pronouns
Pronouns (she/her, they/them, he/him, etc.) are a public way for people to address you, much like your name, and can be shared with a name when making an introduction, both virtually and in-person. Just as we ask and don’t assume someone’s name, we should also ask and not assume someone’s pronouns.

You can add your pronouns to your Canvas account so that they follow your name when posting to discussion boards, submitting assignments, etc.

Below is a list of additional resources regarding pronouns and their usage:

- What are pronouns and why are they important?
- How do I use pronouns?
- How do I share my pronouns?
- How do I ask for another person’s pronouns?
- How do I correct myself or others when the wrong pronoun is used?

Additional Student Support Services

- Registrar (https://registrar.unt.edu/registration)
- Financial Aid (https://financialaid.unt.edu/)
- Student Legal Services (https://studentaffairs.unt.edu/student-legal-services)
- Career Center (https://studentaffairs.unt.edu/career-center)
- Multicultural Center (https://edo.unt.edu/multicultural-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- Pride Alliance (https://edo.unt.edu/pridealliance)
- UNT Food Pantry (https://deanofstudents.unt.edu/resources/food-pantry)

Academic Support Services

- Academic Resource Center (https://clear.unt.edu/canvas/student-resources)
- Academic Success Center (https://success.unt.edu/asc)
- UNT Libraries (https://library.unt.edu/)
- Writing Lab (http://writingcenter.unt.edu/)