# Course Information

<table>
<thead>
<tr>
<th>Course Information</th>
<th>Instructor Information</th>
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<tbody>
<tr>
<td>Microbiology for Non-Science Majors</td>
<td>Sheryl Lumbley, M.S.</td>
</tr>
<tr>
<td>Summer 2019</td>
<td><a href="mailto:slumbley@dcccd.edu">slumbley@dcccd.edu</a></td>
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<tr>
<td>BIOL2420.35481</td>
<td>972-860-8090</td>
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<td>Lecture: 8:00 – 9:50 MTWR M215 (until July 3) and/or Online Lab: 2:00 – 4:30 TR M240 (Expect to stay late)</td>
<td>Office: M240 Hours Available: by appointment/ before lab</td>
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# Course Description

An overview of the morphology, physiology, and taxonomy of representative groups of pathogenic and non-pathogenic organisms. Emphasis is placed on applications to humans and techniques used in growing pure cultures of microorganisms on selected media. A brief preview on public health issues is also presented. Designed for non-science majors and allied health students. **This is a Texas Common Course Number. This is a Core Curriculum course selected by the colleges of DCCCD.**

# Required Materials


Additional lab supplies listed on ecampus will be required as the class begins. **Note: A minimum of 20 hours per week should be devoted to course material outside of class time**

# Course Prerequisites

- BIOL 1406 or SCIT 1407. One of the following must be met: (1) DREA 0093 AND DWRI 0093; (2) English as a Second Language (ESOL) 0044 AND 0054; or (3) have met Texas Success Initiative (TSI) in Reading and Writing standards AND the college Writing score prerequisite requirement. Student cannot take both BIOL 2420 and BIOL 2421 to satisfy the core science credit.

# Texas Core Objectives for Student Learning

The College defines essential knowledge and skills that students need to develop during their college experience. These general education competencies parallel the Texas Core Objectives for Student Learning. In this course, the following skills are in focus.

1. **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication Skills** - to include effective development, interpretation and expression of ideas through written, and visual communication
3. **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

# Student Learning Outcomes

Upon successful completion of this course, students will:

1) Describe distinctive characteristics and diverse growth
requirements of prokaryotic organisms compared to eukaryotic organisms.
2) Provide examples of the impact of microorganisms on agriculture, environment, ecosystem, energy, and human health, including biofilms.
3) Distinguish between mechanisms of physical and chemical agents to control microbial populations.
4) Explain the unique characteristics of bacterial metabolism and bacterial genetics.
5) Describe evidence for the evolution of cells, organelles, and major metabolic pathways from early prokaryotes and how phylogenetic trees reflect evolutionary relationships.
6) Compare characteristics and replication of acellular infectious agents (viruses and prions) with characteristics and reproduction of cellular infectious agents (prokaryotes and eukaryotes).
7) Describe functions of host defenses and the immune system in combating infectious diseases and explain how immunizations protect against specific diseases.
8) Explain transmission and virulence mechanisms of cellular and acellular infectious agents.
9) Use and comply with laboratory safety rules, procedures, and universal precautions.
10) Demonstrate proficient use of a compound light microscope.
11) Describe and prepare widely used stains and wet mounts, and discuss their significance in identification of microorganisms.
12) Perform basic microbiology procedures using aseptic techniques for transfer, isolation and observation of commonly encountered, clinically significant bacteria.
13) Use different types of bacterial culture media to grow, isolate, and identify microorganisms.
14) Perform basic bacterial identification procedures using biochemical tests.
15) Estimate the number of microorganisms in a sample using methods such as direct counts, viable plate counts, or spectrophotometric measurements.
16) Demonstrate basic identification protocols based on microscopic morphology of some common fungi and parasites.
CVC Faculty and Staff expect students to:
- take responsibility for their own learning
- commit to achieving high academic performance
- be meaningfully engaged in the campus community

CVC Faculty and Staff expect to:
- provide students a clear pathway of instruction
- establish clear learning outcomes
- serve as role models and mentors for students

Course Outline
For maximum success in this course you should spend a minimum of 20 hours per week working on course material.

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapter(s)</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Chapter 1 Microbial World and You and Chemical Principles</td>
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<tr>
<td>Week 2</td>
<td>Chapter 2 Chemicals Principles and Chapter 3 Microorganisms Through a Microscope</td>
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<tr>
<td>Week 3</td>
<td>Chapter 4 Prokaryotic and Eukaryotic Cells and 13 Viruses, Viroid’s and Prions</td>
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<tr>
<td>Week 4</td>
<td>Chapter 5 Microbial Metabolism</td>
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<tr>
<td>Week 5</td>
<td>Chapter 6 Microbial Growth and 7 Control of Microbial Growth</td>
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<tr>
<td>Week 6</td>
<td>Chapter 8 Microbial Genetics</td>
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<tr>
<td>Week 7</td>
<td>Chapter 14 Principles of Disease and Epidemiology</td>
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<tr>
<td>Week 8</td>
<td>Chapter 15 Mechanisms of Pathogenicity</td>
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<tr>
<td>Week 9</td>
<td>Chapter 16 Innate Immunity and Chapter 17 Adaptive Immunity</td>
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A more detailed schedule will be posted on eCampus.

Evaluation Procedures
At the beginning of the course, the instructor provides a schedule of examinations and assignments that contribute to the final grade in the course for each student.

900 of the 1000 total points possible will result in an A
800 of the 1000 total points possible will result in a B
700 of the 1000 total points possible will result in a C
600 of the 1000 total points possible will result in a D
Below 599 = F

Exams and Assignments
The final grade for the course reflects evaluation of the student’s work on the following assignments that are calculated as follows:

- 5 examinations valued at 100 points each
- 1 unknown project valued at 100 points
- 2 lab practicals valued at 100 points each
- Daily assignments and quizzes valued at a total of 200 points

Honors Credit Availability
You can earn Honors Credit in this course that will show the completion of an Honors Course on your transcript. Honors credit is important in transfer evaluation for graduation with both Associates and Bachelor degrees with honors.

To qualify for Honors credit, you must sign an Honors Contract at the beginning of the semester. Meet with me to design your
program and complete the contract form. You must earn an A or B in the course in order to receive Honors Credit.

Service Learning  The College offers a Service Learning Program that allows students to earn recognition for hours worked in a volunteer program with a local organization. See the Cedar Valley College web site for additional information.

http://www.cedarvalleycollege.edu/CommunityMembers/Lists/WebsitePages/DispForm2.aspx?List=4910a51c-65b2-4293-9ecd-5f5aa383b44d&id=17

Stop Before you Drop  Under a Texas law (TEC Section 51.907), if you drop too many classes without having an acceptable reason, your GPA could be affected. Be sure you understand how this law may affect you before you drop a class.

The law applies to students who enroll in a Texas public institution of higher education (including the colleges of DCCCD) for the first time in fall 2007 or later. Under this law, you may not drop more than six classes without an acceptable reason during your entire undergraduate career without penalty. For more information, please see our catalog or read Facts About Dropping Classes.

If you drop or withdraw before the official drop/withdrawal deadline, you will receive a grade of W (Withdraw) in each class dropped until the seventh unacceptable drop. You will earn a grade of WF for the seventh unacceptable drop, and each unacceptable drop after that. A grade of WF will be calculated in your GPA as an F.

The deadline for receiving a W is indicated on the academic calendar and the current class schedule.

For more information, you may access:

http://www.dcccd.edu/Why/Reg/Registration/Pages/DropWithdraw.aspx

The Dallas County Community Colleges will charge additional tuition to students registering the third or subsequent time for a course. This class may not be repeated for the third or subsequent time without paying the additional tuition. Third attempts include courses taken at any of the Dallas County Community Colleges since the fall 2002 semester. More information is available at:

http://www.dcccd.edu/PC/Cost/3rdCrseAttmpt/Pages/default.aspx

Attendance Policy  In general, daily class attendance enhances student achievement of an A, B or C in the course. Students should advise instructors of illness, work or family situations that may require absence from a
An absence from lab will remove any points awarded for the lab quiz for that day.

Classroom Policies

NO FOOD, DRINK, CHEWING GUM, CELL PHONES or CHILDREN ARE ALLOWED IN THE LAB. Students will be taught to perform all microbiological procedures safely and we expect that students will do their utmost to perform all procedures in the approved manner. If a student does not follow all microbiological procedures in a safe manner, that student will be asked to leave and be dropped from the course. Students are required to wear closed-toe shoes and a lab coat at all times in the lab. Lab goggles must be worn when microorganisms are being handled at the lab table.

Lab coat, goggles, and any writing utensils used for lab must be kept in the lab throughout semester and must be disinfected before leaving the lab at the end of the semester. You may not take the lab coat or goggles from the microbiology lab to use for any other course during the semester.

Be Prepared for Lab

All students must read the lab and take a lab quiz before they may participate in that day’s lab. Students will be asked to leave lab if they are not prepared or the lab quiz is not completed. This is a safety issue. If you are not wearing protective items, you will be asked to leave, and you will not receive credit for the lab.

Lab Hazards

Students will be routinely handling pathogenic organisms during lab. You should consult your physician as to whether you can safely participate in a microbiology lab class if you are pregnant, immunocompromised, or have any other health issues.

Lab Supplies

Students are required to bring a lab coat (disposable is fine), lab goggles or safety glasses, a box of glass slides (available in the bookstore), #2 pencils with erasers, a black ultra-fine-point Sharpie, ¾” masking tape, a box of gloves in your size, and three ring binder with ruled notebook paper (to hold lab manual).

Tutoring Services

All tutoring is available on a "drop in" basis; however, if you would like to make an appointment for a specific time, please call 972-860-2974. We encourage you to make an appointment for all written assignments. During each visit to the center, you will use your student ID# to sign in and out on our computer at the front desk. More information is available at: http://www.cedarvalleycollege.edu/FutureStudents/StudentServices/TutoringServices/default.aspx
QUALITY ENHANCEMENT PLAN
Cedar Valley College's Quality Enhancement Plan is designed to improve student learning in mathematics. Read more about our QEP at: http://www.cedarvalleycollege.edu/QEP/default.aspx

INSTITUTIONAL POLICIES

Academic Advising
Academic Advising is a collaborative educational process whereby students and their advisors are partners in meeting the students' academic, personal, and career goals. This partnership is a process that is built over the student’s entire educational career at Cedar Valley College.

Educational planning is available to all students. First time in college students must meet with academic advisors prior to enrolling in classes; however, continuing students may choose to see faculty advisors, faculty counselors, and/or program coordinators after classes begin. All parties have clear responsibilities for ensuring a successful partnership. For more information, you may access: https://www.cedarvalleycollege.edu/FutureStudents/StudentServices/AcademicAdvising/Pictures/AdvisingSyllabus.pdf

Academic Honesty
Academic honesty is expected, and integrity is valued in the Dallas County Community Colleges. Scholastic dishonesty is a violation of the Code of Student Conduct. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion. See Also Student Code of Conduct. https://www1.dcccd.edu/catalog/ss/code.cfm?loc=CVC

ADA Statement
If you are a student with a disability and/or special needs who requires accommodations, please contact the college Disability Services Office at 972-860-8119.

Emergency Alert
Sign up for DCCCD Emergency Alerts to receive a text-message, e-mail and/or phone call when there is an unscheduled evacuation or closure of a DCCCD campus or office because of weather closures, utility outages, police or other emergencies. Subscribing is free, but standard text message charges from your cell phone provider will apply. Please refer to: http://www.dcccd.edu/SS/OnlineSvs/EmergAlerts/Pages/default.aspx

Financial Aid
Students who are receiving any form of financial aid should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate after the drop date are also subject to this policy.

Health Center Services
Basic first aid for minor cuts, scrapes, insect stings, and heat, etc.
• Over-the-counter medications for headaches, fever, seasonal allergies, and colds
• Over-the-counter medications for mild allergic reactions
• Emergency sanitary pads
• Blood Pressure check
• Coordination with outside health agencies such as Carter Blood Care; Dallas County Health Dept. (HIV/STD testing--free, twice a semester); UT Southwestern mobile mammography; Immunizations once a month for children <19 y.o. from the DCDHHS; Agape Massage; and Employee Wellness Screening
• Rest area for stress relief, migraine headaches, post seizure activity
• AED (Automatic External Defibrillator) for CPR

Religious Holidays

Absences for observance of a religious holy day are excused. A student whose absence is excused to observe a religious holy day is allowed to take a make-up examination or complete an assignment within a reasonable time after the absence.