Course Syllabus for
BIOL 2421 Microbiology for Science Majors
Section 83001
4 credit hours (3 lecture/ 4 lab)

INSTRUCTOR’S INFORMATION
(Instructor reserves the right to make changes to the syllabus)

Semester and Year: Spring 2019
Meeting Dates: Monday and Wednesday
Meeting Times: Lecture: WH 277 8:10 am – 9:30 am
Laboratory: SH 146 9:40 am – 11:40am

Instructor: Dr. Megan Romeo
Email: meganromeo@dcccd.edu
Office hours: before and after class or upon request
Messages can be left in the Adjunct Faculty Office (Alamito A-110)
Tel: 972-238-6140

Last Day to Withdraw: Wednesday, April 17th

Final Exam: Wednesday, May 15th 8:00am – 9:50am

Evaluation Procedures:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Exam (3 @ 100pt each)</td>
<td>300</td>
</tr>
<tr>
<td>Cumulative Final Exam</td>
<td>150</td>
</tr>
<tr>
<td>Group Microbe Presentation and write-up</td>
<td>100</td>
</tr>
<tr>
<td>Self-Review</td>
<td>75</td>
</tr>
<tr>
<td>In-class group work</td>
<td>25</td>
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<tr>
<td>Lab Practical (2 @ 100pt each)</td>
<td>200</td>
</tr>
<tr>
<td>Gram negative unknown</td>
<td>35</td>
</tr>
<tr>
<td>Lab Assessments (3)</td>
<td>15</td>
</tr>
<tr>
<td>Lab Quizzes (4 @ 25 pt each)</td>
<td>100</td>
</tr>
<tr>
<td>Total Points Earned</td>
<td>1000</td>
</tr>
</tbody>
</table>

A = 900 – 1000 pts; B = 800 – 899.99; C = 700 – 799.99; D = 600 – 699.99; F = under 600

Grades will not be rounded

Required Materials:
Textbook: Brock Biology of Microorganisms (Madigan, Martinko, Stahl, Bender, 15th edition)

Lab Manual: [http://delrio.dcccd.edu/jreynolds/microbiology/RLCmicroindex.html](http://delrio.dcccd.edu/jreynolds/microbiology/RLCmicroindex.html)

Students must print off a hard-copy of the lab exercise prior to class. Copies of the exercise are required to complete lab for the day. Printer paper is not supplied by the lab.

Lab Materials: lab coat or smock, safety glasses/goggles, latex/nitrile gloves, closed-toed shoes

Optional: Photographic Atlas for Microbiology by Leboffe (Morton Publishing)
**Attendance Policy:**
Attendance is required for class participation and course work; however, there is no official attendance grading policy. Missing lecture or lab will greatly affect your grade for the course.

No make-up opportunities for missed assignments or lecture exams. Lecture exams may only be re-scheduled if the student contacts the instructor 48 hours prior to the scheduled exam time.

If you are ill, you must contact the instructor immediately. You will need to provide a doctor's note specifying that you were unable to attend the exam at that date and time.

In case of illness/re-scheduled exams, you may not receive an identical exam to the rest of the class.

No make-up lab practicals will be given. If you cannot attend your own section's scheduled lab practical, you will need to attend another lab period during the lab practical time period.

You are expected to be in lab every period. Missing lab will definitely affect your lab practical grade. If you must miss lab, I can give you the lab times for other sections, but you need to introduce yourself to that instructor and ask if it would be alright to attend their lab.

If the student feels that they will be unable to complete the required coursework, it is the student’s responsibility to withdraw formally from the course. Failure to drop or withdraw will result in receiving a performance grade, usually an “F.”

**Other instructor policies:**
Electronics:
Laptops/tablets are allowed in lecture to take notes; they must be muted.
Absolutely NO cell phones, tablets, or computers on the bench during lab.

Cell phones:
Lecture – if you need to answer your cell phone, please do so in the hallway and exit the classroom and quietly as possible.
Lab – Banned from the work area. They must remain in your bag during lab.

Food and drink:
Lecture – allowed in the lecture. Try to not bring anything too noisy or aromatic.
Lab – absolutely no food or drink. Any food/drink items must remain in your bag or just outside of the lab door.

Consider this class as or more important than your job. It is not OK to leave lab early (or miss lab) because of work. These absences will be noted.

**College Policies and Procedures:**
For Institution Policies, please refer to Richland College Institution Policies: [http://www.richlandcollege.edu/syllabusinfo](http://www.richlandcollege.edu/syllabusinfo)

**Academic Honesty**
Scholastic dishonesty is a violation of the Code of Student Conduct. Dishonesty includes cheating on exams, plagiarism, etc. Enrollment in a DCCCD course indicates acceptance of the Code of Student Conduct: [http://www.richlandcollege.edu/conduct](http://www.richlandcollege.edu/conduct)

Academic dishonesty will result in a “zero” for the assignment/quiz/exam/practical, etc. For lecture exams and lab practicals, the student(s) found to be academically dishonest will receive a “zero” and no partial credit will be given to classmates.
Disability Services/Special Services
Students with a disability and/or special needs that require ADA accommodations should contact the Richland College Disability Services Offices at T120 or (972) 238-6180.

Religious Holidays
Religious holidays are excused absences. The student must contact the instructor prior to the day of religious observance to schedule make-up work, exams, etc.

Tutoring
Free tutoring is available at the Science Corner (2nd floor of Sabine Hall above bookstore) to all DCCCD students.

General Course Information
Course Catalog Description:
Principles of microbiology, including metabolism, structure, function, genetics, and phylogeny of microbes. The course will also examine the interactions of microbes with each other, hosts, and the environment. Emphasis is placed on relationships that influence humans: public health, infectious diseases, and immunology, biotechnology, and environmental and industrial applications. Lab experimentation with pure cultures and selected media will be used to study extensively the medical, environmental, and industrial importance of these microbes. Designed for students in science or pre-professional programs. (3 Lec., 4 Lab.)

Course Objectives:
A study of the morphology, physiology, and taxonomy of representative groups of pathogenic and non-pathogenic organisms. Emphasis is placed on the relationships that influence humans: public health, infectious diseases, and immunology, biotechnology, and environmental and industrial applications. Lab experimentation with pure cultures and selected media will be used to study extensively the medical, environmental, and industrial importance of these microbes. Designed for students in science or pre-professional programs.

- Provide examples of the impact of microorganisms on agriculture, environment, ecosystem, energy, and human health including biofilms.
- Identify unique structures, capabilities, genetic information flow of microorganisms
- Compare the life cycles and structures of different types of viruses
- Discuss how microscopy has revealed the structure and function of microorganisms.
- Give examples of the range of metabolic diversity exhibited by microorganisms, impact of metabolic characteristics on growth, and control of growth.
- Describe evidence for the evolution of cells, organelles, and major metabolic pathways from early prokaryotes and how phylogenetic trees reflect evolutionary relationships.
- Describe the causes and consequences of mutations on microbial evolution and the generation of diversity as well as human impacts on adaptation.
- Classify interactions of microorganisms on human and non-human hosts as neutral, detrimental, or beneficial.
- Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
- Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
- Communicate effectively the results of scientific investigations.
Prerequisites:
BIOL 1406, BIOL 1407, and CHEM 1411.
One of the following must be met:
(1) DREA 0093 and DRWI 0093;
(2) English as a Second Language (ESOL) 0044 AND 0054;
(3) have met Texas Success Initiative (TSI) in Reading and Writing standards AND DCCCD Writing score prerequisite requirement.
Student cannot take both BIOL 2420 and BIOL 2421 to satisfy the Core Science credit.

Core Curriculum Statement
Through the Texas Core Curriculum, students gain a foundation of knowledge of human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning.

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