Biology for Science Majors I
BIOL 1406-65310 Semester: Summer I 2019
June 6, 2018 – July 3, 2019

Lecture and Lab: Dr. Bennett I. O'Connor
Email: Bconnor@dcccd.edu
Lecture: Room Number: H30
Office Number: H119
Meeting Days & Time: Monday through Thursday Lecture Online; Lab 11:00-1:20 pm
Room Number: H119
Credit Hours: 4

Division: Science, Technology, Engineering and Math - STEM
Office Hours: 8:00AM – 5:00PM M-F
Office Phone: 214-860-8649, then 214-860-8760
Office Location: H129

Course Description:
Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics, and scientific reasoning are included. Laboratory activities will reinforce these concepts. (3 Lec. 3 Lab.)

Course Pre-requisites: College level ready in Reading and Writing.

Course Materials/Supplies Needed
- May purchase hardcopy from Bookstore
- LAB MANUAL: Print labs from eCampus prior to attending each lab session.
- Chemical Splash Goggles and Nitrile Gloves for working with chemicals (available in the College Bookstore)
- Scantrons: 9 - 882E
- 3-Ring Binder with dividers for the labs and lab assignments printed from eCampus (2 inch binder recommended)

Core Objectives
- 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

Student Learning Outcomes for Lecture
After successful completion of this course the student will be able to:
- Describe the characteristics of life
- Explain the methods of inquiry used by scientists
- Identify the basic requirements of life and the properties of the major molecules needed for life
- Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells and eukaryotic cells.
- Describe the structure of cell membranes and the movement of molecules across a membrane.
- Identify the substrates, products, and important chemical pathways in metabolism.
- Identify the principles of inheritance and solve classical genetics problems.
- Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
- Describe the unity and diversity of life and the evidence for evolution through natural selection
Student Learning Outcomes for Lab

- 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.
- Describe the characteristics of life.
- Explain the methods of inquiry used by scientist.
- Identify the basic properties of substances needed for life.
- Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
- Describe the structure of cell membranes and the movement of molecules across a membrane.
- Identify the substrates, products, and important chemical pathways in metabolism.
- Identify the principles of inheritance and solve classical genetic problems.
- Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
- Describe the unity and diversity of life and the evidence for evolution through natural selection.

Course Outline:

Objectives, which are determined by the district curriculum committee, are measurable or observable and will be evaluated. Different modes of instruction will be utilized for presentation and evaluation. Lecture topics will include characteristics of life, homeostasis, scientific process, biological chemistry, cells, plasma membranes, osmosis, metabolism, enzymes, cellular respiration, photosynthesis, mitosis, meiosis, genetics, DNA, replication, transcription, and translation. Class objectives will be identified at the beginning of each class session and posted on eCampus. The course calendar at the end of the syllabus shows the topics for each class and test deadlines.

Class Procedures: Successful completion of this course can be accomplished if you:

- study and read the textbook,
- listen to lectures available on eCampus
- attend each class and turn in all assignments on time,
- complete pre-lab questions before lab, attend all labs, and complete lab activities,
- use the resources available on eCampus and from the textbook and check Weekly Assignments each week,
- participate in all discussion,
- spend time studying with the STEM tutors,
- write your name, course and section, student ID, date, and instructor name on all assignments,
- state your name, course, and section on all email communication

Evaluation Procedures:

LECTURE EXAMS: 55% of the total grade

- Five (5) required lecture exams cover the assigned chapters from the book and are listed on the course calendar.
- ALL lecture exams will be taken online and require the use of the Respondus Lockdown Browser which must be downloaded onto your computer. OR exams can be taken at the testing center, MVC library or computer lab on campus as computers on site have the Respondus Lockdown Browser downloaded.
- In the event of a missed exam, the instructor must be notified within 24 hours of the scheduled exam and documentation will be required for the absence.

ONLINE ASSIGNMENTS: 15% of the total grade

- 7.5% Current Events
- 7.5% Online quizzes/activities/assignments etc.

LABORATORY PRACTICALS: 20% of the total grade

- Laboratory Practicals MUST be taken during the scheduled lab exam time (see course calendar). You will need a Scantron 882E for each practical.
- A laboratory practical tests your knowledge of laboratory information, ability to interpret data, and ability to successfully perform laboratory skills.

LABORATORY NOTEBOOK: 10% of total grade

- Your Lab Instructor will provide full details on Lab Notebook requirements.
Grading Scale:
- A = 89.5-100%
- B = 79.5 - 89.49%
- C = 69.5 - 79.49%
- D = 59.5 - 69.49%
- F < 59.5%

You will not receive curves or bonus if awarded if you are late to class, late turning in assignments or missing assignments, do not participate, or have too many absences.

Instructor Attendance Policy:
- ATTENDANCE—ATTENDANCE IS MANDATORY and class participation is expected. It is important that you arrive in class on time and prepared by reading the assignment before class. Students are responsible for attending classes in which they are enrolled.
  - If an absence occurs, you MUST contact your instructor regarding work you have missed. If you are unable to complete this course, Withdrawal from a course is a formal procedure, which YOU must initiate; your instructor cannot do it for you. You may withdraw at the Admissions or Counseling Offices.
  - If you stop attending class and fail to withdraw, YOU will receive a grade, usually an "F". **Last day to withdraw with a W is June 25th**
  - NOTE: Students often drop courses when help is available that would enable them to continue. I hope you will discuss your plans with your instructor if you feel the need to withdraw.
  - If you are not present in lab when attendance is taken you will be counted absent. You will not be allowed to take receive credit for assignments that day.

Student Expectations:
- Students will develop personal responsibility in the areas of on-time attendance, completing all assignments on time, studying 12-15 hours per week outside of class, and bringing the textbook to class.
- Students will develop personal responsibility in the areas of proper care for scientific equipment, proper care and respect for biological specimens, safety in the laboratory, proper storage of laboratory equipment, and cleanliness of laboratory stations.
- Students must write their name, course and section and instructor name on all assignments
- No earbuds in class. Please turn your cell to vibrate and step outside if you must text. No texting in class.

Late Work Policy:
- Students must contact the instructor if they will miss class, lab, or the due date for an assignment within 24 hours.
- Documentation of an excused absence is required. Arrangements must be made with the instructor to make-up a lab, exam, or assignment.
- Work is due at the beginning of class on the due date.
- Twenty points may be deducted per day for an assignment that is late if accepted. In class work that has a late start due to tardiness will have a minimum of 10 points deducted if accepted.

Makeup Exam Policy:
- Students must contact the instructor if they will miss an exam within 24 hours of the due date.
- Documentation of an excused absence is required.
- Arrangements must be made with the instructor to make-up an exam.

Mountain View College Institutional Policies:

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<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
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<tbody>
<tr>
<td>06/10</td>
<td>Chapter 4 - Cell Structure of plasma membranes</td>
<td>06/11</td>
<td>Chapter 5 - Structure and Function of plasma membranes Continued</td>
<td>06/12</td>
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<td></td>
<td>Test #1 (Chapters 1-3) Due</td>
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<td>Chapter 6 - Introduction to Metabolism</td>
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<td>Lab 3 - Scientific Method and Homeostasis</td>
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<td>Lab 5 - pH and Buffers Lab 6 - Testing Organic Molecules</td>
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<td>Lab 4 - Solutions and Dilutions</td>
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<td>06/17</td>
<td>Chapter 10 - Cell Reproduction</td>
<td>06/18</td>
<td>Chapter 11 - Meiosis and Sexual Reproduction Chapter 12 - Mendel’s experiments and heredity</td>
<td>06/19</td>
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<td>Review Chapter 7 and 8 Lab Practical #1</td>
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<td>CH 10 Quiz Due 11:59pm</td>
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<td>Lab 11 - Enzymes - Catalase and Lipase</td>
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<td>Lab 12 - Aerobic Cellular Respiration Lab 13 - Anaerobic Cellular Respiration</td>
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<td>Lab 17 - Meiosis Lab 18 - Genetics - Complete dominance</td>
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<td>Lab 19 - Genetics - Incomplete dominance, Codominance, and Sex-Linked Inheritance</td>
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<td>Lab 20 - Genetics - Dihybrid, Polygenic inheritance and pedigrees WATCH BIOTECHNOLOGY: <a href="https://www.youtube.com/watch?v=fNPyAQ9bAPk">https://www.youtube.com/watch?v=fNPyAQ9bAPk</a> Last day to drop with a “W”</td>
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<td>CH 17 Quiz Due</td>
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<td>7/1</td>
<td>Lab Practical #3 – “LABS 16-24 IN LAB “</td>
<td>7/2</td>
<td>Test #5 (Chapters 14, 15, 17, and 21)</td>
<td>7/3</td>
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6/21   | Homework: Read Chapter 15 - Gene and Proteins Homework: Read Chapter 17 - Biotechnology and Genomics |
|        | Test #4 (Chapters 10-13) |

|        | Homework: Current Event 3-Due |