Biology for Science Majors I
BIOL 1406-63473
Semester: Spring 2019
January 22, 2019–May 16, 2019

Lecture Professor: Professor Naima Hill
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Laboratory Professor: Professor Natasha Stracener  Email: natashastracener@dcccd.edu
Meeting Days & Time: Lecture: Online
                      Lab: Tuesday/Thursday 12:50-2:10pm, Room H 119
Credit Hours: 4 Semester Hours
Division: Science, Technology, Engineering and Math - STEM
Division Office Phone: 214-860-8649 then 214-860-8761  Division Office Number: 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
  o May purchase hardcopy from Bookstore or online if wanted
• LAB MANUAL: Print labs from eCampus prior to attending each lab session.
• Must Purchase Chemical Splash Goggles and Nitrile Gloves to participate in lab. Make sure to have every lab. Can either buy:
  o gloves and goggles available in the College Bookstore or at local store (Walmart, Target, etc)
  OR
  o Lab Safety Kit SKU 019071998: which includes: 1 Chemical Splash Goggles, 10 pairs Nitrile Gloves for working with chemicals, and 1 clear plastic apron (available in the College Bookstore- $30.00)
• Scantrons: 882E for lab practicals
• 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 week and posted on eCampus. The course calendar at the end of the syllabus shows the topics for each week and test deadlines.

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. The sixth exam is a comprehensive final exam given during exam week. – Lowest grade will be dropped only if all exams are taken.
• 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:** 10% of the total grade
• 5% Discussion Board posts
  0 Students must post an initial post and response to a fellow classmate for each discussion board post
• 5% Online quizzes/activities/assignments etc.

**LABORATORY PRACTICALS:** 15% 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.
• There is a time limit of 1 hour - 15 minutes for all lab exams.
• 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
• You must turn in your lab notebook at the start of each lab practical. Labs must be attended and performed to be graded. Your Lab Instructor will provide full details on Lab Notebook requirements.

**LAB REPORT:** 10% of the total grade

You will not be eligible for bonuses on tests or curves if you are late to class, late turning in assignments, missing assignments, do not participate, not prepared or have too many absences.

**GRADING SCALE - FOR EACH EXAM, ASSIGNMENT, LAB, AND FINAL GRADE:**

\[
\begin{align*}
A &= 89.5 + \\
B &= 79.5 - 89.4 \\
C &= 69.5 - 79.4 \\
D &= 59.5 - 69.4 \\
F &< 59.4 \\
\end{align*}
\]

**Instructor Attendance Policy:**
• Students are expected to sign into eCampus multiple times a week. Students have the responsibility to go through the course material and complete all assignments by due dates provided. If for some reason you can not complete an
assignment by the due date, an email must be sent to the professor within 24 hours with a notice of issue. Logging in multiple times per week is vital to your success in this course. Plan your own due dates in advance of when items are actually do - work ahead.

**Student Expectations:**
- Students will develop personal responsibility in the areas of on-time attendance (logging in multiple times per week to the course), completing all assignments on time, and studying 12-15 hours per week outside of 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 type their **name, course and section and instructor** name on all assignments.

**Late Work Policy:**
- Students must contact the instructor if they will miss 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 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.

**LABORATORY EXPECTATIONS:**

**ATTENDANCE IS MANDATORY** and each exercise will require laboratory participation. Attendance will be taken at the beginning of each class period.
- Students are required to print a copy of the lab for each day from eCampus prior to class. The labs are formatted for the Arial font. If you do not have access to a computer and printer, you can print the pages for a small fee in the campus computer labs, W139 (W141 and W142).
- Instructions are given at the beginning of each lab and WILL NOT be repeated. Students who miss instruction will not be allowed to participate in lab.
- Labs for each lab practical must be kept in a lab notebook and brought to each lab session.
- Nitrile Gloves and chemical splash goggles are **required** when working with chemicals. **Purchase them before class! NO GLOVES, NO GOGGLES, NO LAB!**
- Hazardous Materials are used in the laboratory areas. Material Safety Data Sheets (MSDS), required by OSHA, are available for all students to observe upon request.
- **Cell Phones** are not permitted to ring in the lab. **No texting in class or lab– please step out into hall**
- Students who bring computers to class are not permitted to check email or the Internet.
- **Eating, Drinking, Gum Chewing, and/or Applying Cosmetic are NOT ALLOWED** in the laboratory at any time. Do not bring any beverage containers or water bottles into the lab.

**eCampus:**
- Log into the class website multiple times per week.
- Weekly material will be opened up before Monday morning of the new week. The class will have 2 weeks ahead open for students to work ahead if they choose. Discussion board initial posts will be due by Friday at midnight and second discussion board posts due by Sunday at midnight. Assignments and tests will be due Sundays at midnight unless otherwise noted on eCampus.
- Go to the website: http://ecampus.dcccd.edu. Your login is an “e” and your seven-digit student identification number (example: e7654321). If you have never used eCampus before, your password is the same as your user name until you change it under personal information.

**eConnect:** Your final grade will be posted to eConnect and the course will be made unavailable.

**Disclaimer:** Instructor reserves the right to change course calendar and syllabus if needed.

**Withdraw date:** April 17, 2019

Please speak with the instructor if you are having difficulty in the course. 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.

**Academic Dishonesty:**
Students caught plagiarizing an assignment will receive a “0” on the test or assignment and will be subject to an “F” in the course and possible expulsion from the college. Any testing or exam no phone or notes may be used in Testing Center, Classroom or Lab Practical and may result in a “0” on the assignment and possible “F” and or expulsion. Make sure to study the materials in the course to learn the information to use to answer the test questions. Software is used to limit your internet use during test taking.

Mountain View College Institutional Policies:
| Week 12 | Nov 11 | Chapter 13 - Modern Understandings of Heredity | Nov 17 | Lab 21 - DNA Technology -DNA isolation  
Lab 22 - DNA technology - Gel electrophoresis  
Drop Date = November 15, 2018. Make sure to talk to Instructors before Dropping! |
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| Week 13 | Nov 18 | Chapter 14 - DNA structure and Function  
Discussion Board  
Quiz | Nov 24 | HOLIDAY  
NO LAB |
| Week 14 | Nov 25 | Chapter 17 - Biotechnology and Genomics  
Discussion Board  
Quiz | Dec 1 | Lab 23 - DNA Replication  
Lab 24 - Transcription, RNA Processing, Translation |
| Week 15 | Dec 2 | Chapter 15 - Gene and Proteins  
Chapter 21.1, 21.2 Virus Reproduction  
Discussion Board  
Test # 5 (Chapters 14,15, 17, 21.1, 21.2) | Dec 8 | Lab Review  
Lab Practical #3 |
| Week 16 | Dec 9 | FINAL (Comprehensive) | NO LAB |