GRAYSON COLLEGE

Course Syllabus

Course Information
BIOL 2120 Microbiology
Sections: Biol2120
Spring 2021
Face-to-Face course, Laboratory meets 3 hours/week, Testing conducted on campus in the classroom

Professor Contact Information
Professor name: McLaughlin, B.
Science Department Phone: 903-463-8797 or 903-463-8702

Course Pre-requisites, Co-requisites, and/or Other Restrictions
Co-requisite: BIOL 2320. Students must have passed the reading portion of the THEA (score of at least 230). Pre-requisites: Successful completion with a grade of C or better in BIOL 2301/2101, CHEM 1406 or CHEM 1311/1111 or consent of the Science Chair required. College readiness in reading required. (R)

Course Description
BIOL 2120. Microbiology Laboratory. (0-3-1). Study of the morphology, physiology, and taxonomy of representative groups of pathogenic and nonpathogenic microorganisms. Pure cultures of microorganisms grown on selective media are used in learning laboratory techniques. Includes a brief preview of food microbes, public health, and immunology. In this course students will participate in experiments including microscopic examination, isolation, cultivation, control of growth, and identification of microorganisms (emphasis on bacteria).

Student Learning Outcomes
Student learning outcomes which will be addressed in laboratory and/or lecture.

1. Students will demonstrate an understanding of factors that lead to microbial antibiotic resistance, as well as techniques for detecting resistance, and assess the effects of such resistance on society.
2. Students will identify examples of harmful as well as beneficial actions of microorganisms, and extrapolate their effects on society.
3. Students will demonstrate critical thinking, problem solving, and decision making while identifying of bacteria in a culture.

Required Textbooks

Microbiology: Laboratory Theory & Application by Michael J. Leboffe and Burton E. Pierce, 3RD ed. Morton Publishing

ISBN 13: 978-1-61731-477-3

Suggested Course Materials
None

Required Assignments and Academic Calendar

In case of inclement weather, emergency closings, or other unforeseen disruptions to scheduled classes, students must log onto their Canvas accounts for directions on where or how to continue their coursework.

Outline of Topics Covered

Week 1	Laboratory Safety p.1, Experiment: Introduction to the Light Microscope p.143 Common Aseptic Transfers and Inoculation Methods p.26, Bacterial Smear (p.178) and the Bacterial Motility: Wet Mount and the **Hanging Drop Preparations** p.211
Week 2	Smear p.178 and the **Gram Stain** p.187 Streak Plate Method of Isolation p.45, Colony Morphology p.67, and Growth Patterns in Broth p.83.
Week 2	Selective and Differential Media: Phenylethyl Alcohol Agar p.229, MacConkey Agar p.247, and EMB Agar p.255.
Week 3	Physical Factors: The Effect of Temperature on Growth p.105, The Effect of pH on Growth p.95, The Effect of Osmotic Pressure on Growth p.101.
Week 3	Antimicrobial Susceptibility Testing (The Kirby Bauer Method) p.447
Week 4	Catalase Test p.257, Oxidase Test p.262, "Carbohydrate Fermentation" Phenol Red Broth p.279. Mannitol Salt Agar p.241
Week 4	IMViC Test: : SIM (Indole) p.365, Methyl Red /Voges-Proskauer p.287, Citrate p.313, Hydrogen Sulfide Test p.365 Decarboxylation Test p.279, Phenylalanine Deaminase Test p.283, Nitrate Reduction Test p.267,
Week 5	Unknowns Streak Plate Method of Isolation p. 45 Dichotomous Key prep for unknowns
Week 5	unknowns
Week 5	Unknowns, **Compile data, identify unknowns, write report.**
Week 6	Unknown due,
Week 6	Thanksgiving Holiday
Week 7	Lab Final exam
Week 8	
Week 8	**Finals Week**

Dates and sequence of topics are subject to change. Changes will be announced in class in a timely manner.

Required Assignments & Academic Calendar

In case of inclement weather, emergency closings, or other unforeseen disruptions to scheduled classes, student must log onto their Canvas accounts for directions on where or how to continue their coursework.

Important Dates:
First day of classes:
Last day to add/change courses:
Thanksgiving Holiday
Last day to drop/withdraw from course:
Final Exams:

Methods of Evaluation
Three gram stains will be produced by each student and evaluated by the instructor. The Gram stain is calculated as a part of the "Practical" grade, which is 15% of the overall lab grade. Each student will prepare a hanging drop slide and focus it under oil immersion magnification. The hanging drop is calculated as a part of the "Practical" grade for the course, which is 10% of the overall lab grade. Dichotomous Keys will be prepared before starting the unknowns and will, which is 10% of the overall lab grade. Each student will receive a test tube containing 2 unknown types of bacteria that must be identified. Unknown lab reports are due at the beginning of lab on Monday the week after completing unknowns. , which is 35% of the overall lab grade. Late gram stains, hanging drops and unknown reports will not be accepted. Students will take final exam as scheduled, which is 30% of the overall lab grade. Students who cannot make the final exam may take a make-up exam PRIOR to the scheduled exam. No late exams will be allowed.

Grading
Grades will be calculated in the following manner:
The practical grade for the gram stain will constitute 15% of the lab final grade (evaluated for smear thickness and, for color, contrast, and consistency)
The hanging drop constitute 10% of the final lab grade.
The grade for the unknown report Dicotomous Key will constitute 10% of the final lab grade.
The grade for the unknown report will constitute 35% of the final lab grade.(evaluated for techniques performed, decisions made and problem solving, as well as results/outcome).
The final exams will constitute 30% of the lab grade.

Grading

Due to the new combined course format lab and lecture will be combined to produce a single grade. The combined grade is calculated by scoring the lab and lecture as described in their individual syllabi. Those grades will then be weighted with the lecture accounting for 60% of the student's final grade and the lab 40%.

Averages will be rounded up or down. For example, an 89.5 will be rounded up to a 90 and 89.4 will be rounded down to an 89.

Letter grades will be assigned as follows:

89.5	-	100	=	A
79.5	-	89.4	=	B
69.5	-	79.4	=	C
59.5	-	69.4	=	D
0	-	59.5	=	F

Methods of Instruction

Lectures by the instructor will be the main method of instruction. Group work, class discussions, power point presentations, overhead transparencies, skits, models, etc., may also be incorporated to enhance the learning process.

Class Attendance

Academic success is closely associated with regular classroom attendance and course participation. All successful students, whether on campus or online, are expected to be highly self-motivated. All students are required to participate in courses regularly and are obliged to participate in class activities and complete and submit assignments following their professors' instructions. Students taking courses during compressed semester time frames such as mini-mester, summer sessions, and mid-semester should plan to spend significantly more time per week on the course. Responsibility for work missed because of illness or school business is placed upon the student. More than two (2) absences are considered to be excessive. **In accordance with the College's Developmental Education Plan, students withdrawn from their only developmental course may be withdrawn from all academic courses.** In addition, students' eligibility to receive financial aid or live in a College dormitory can be affected by withdrawal from courses. When administrative withdrawal occurs, any tuition refund would be made in accordance with state regulations.

Student Conduct & Discipline

Please use this link for the Grayson College Student Handbook.

http://www.grayson.edu/current-students/catalogs-and-handbooks/Student%20Handbook%202016.pdf (Links to an external site.)Links to an external site.

Classroom Behavior:
Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular attendance and an attitude that seeks to take full advantage of the educational opportunity.

Defacing College Property:
Anyone caught defacing property in the classroom will be responsible for cleaning, repairing or replacing the defaced property. Defacing property includes, but is not limited to, writing, marking or scratching on the tables, tabletops, chairs, cabinets, counter tops, shelving or walls.

Cell Phone Policy:
All cell phones and other electronic devices must be turned off before entering the classroom. Text messaging is not permitted during class. If you have an emergency and need to take a call during class, you must inform the instructor before the beginning of class. Turn your ringer to vibrate, and when your call comes in, pick up all of your belongings and leave the classroom. You may return to class the next time the class meets.

Academic Integrity:
The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic Dishonesty, any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the college's policy on plagiarism (see GC Student Handbook for details). Grayson College subscribes to turnitin.com, which allows faculty to search the web and identify plagiarized material.

The policy of the Science Department: Any instance of a) plagiarism, b) collusion, c) cheating, or d) falsifying records, will result in a "0" for the assignment. The "0" assigned for cheating cannot be dropped or replaced by another grade when calculating the course average.

TITLE IX
GC policy prohibits discrimination on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex, sexual orientation, spousal affiliation and protected veterans status. Furthermore, Title IX prohibits sex discrimination to include sexual misconduct: sexual violence (sexual assault, rape), sexual harassment and retaliation.
For more information on Title IX, please contact:

Dr. _____, Title IX Coordinator (903-463-8714)
Mr. _____, Title IX Deputy Coordinator- South Campus (903) 415-2601
Mr. Mike McBrayer, Title IX Deputy Coordinator (903) 463-8753

Website: http://www.grayson.edu/campus-life/campus-police/title-ix-policies.html
GC Police Department: (903) 463-8777- Main Campus) (903) 415-2501 - South Campus)
GC Counseling Center: (903) 463-8730
For Any On-campus Emergencies: 911

Grayson College campus-wide student policies may be found on our Current Student Page on our website: http://grayson.edu/current-students/index.html

COVID-19 Syllabus Information

Grayson College continues to monitor the evolving COVID-19 situation and align our college planning with guidance from the local and state health officials. Our primary goal is to protect the health and safety of our students, faculty, staff, and the Grayson community, while delivering quality education. We will continue to communicate as more information becomes available.

Safety requirements for students, faculty, staff, and the general public will be posted and kept current, so please stay tuned to your Viking email and the COVID 19 page on the Grayson College website for additional information or other changes that may be announced.

Grayson College COVID-19 Safety Protocol

The best way to prevent illness is to avoid being exposed to this virus. However, as a reminder, the Centers for Disease Control and Prevention (CDC) always recommends everyday preventive actions to help prevent the spread of respiratory diseases, including:

- Wash your hands often with soap and water for at least 20 seconds, especially after going to the bathroom; before eating; and after blowing your nose, coughing, or sneezing. If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol.
- Always wash hands with soap and water if your hands are visibly dirty. For information about handwashing, see CDC's Handwashing website.
- Avoid touching your eyes, nose, and mouth.
- Cover your cough or sneeze with a tissue, then throw the tissue in the trash.
- Avoid close contact with people who are sick.
- Stay home when you are sick.

Grayson College COVID-19 Instructional Guidelines

Grayson College continues to monitor information relating to the COVID-19 Pandemic. The

College has taken steps to ensure that as many of our programs/courses can continue in the event that the College must re-institute partial and/or full campus closure to the public.

Quality education will be moved to a remote delivery format, when feasible, which includes one or more of the following methods:

- Live Streaming instruction (synchronous)
- Recorded instruction (asynchronous)
- Online or web activities using the Canvas platform
- Video capture, both live and recorded sessions
- Use of open educational resources (OER) in place of traditional textbooks

Grayson College COVID-19 Lab Safety Protocol

In accordance with the Texas Department of Health and Human Services, Grayson College will follow these guidelines:

Groups of 9 of less may be scheduled for small group labs, where hands-on skills are necessary to be practiced or demonstrated DMW 5.5.20

Social distancing will be practiced to reduce the risk of transferring germs

Faculty and students will be screened prior to entering a lab or classroom, which will include:

Taking each person's temperature

Asking CDC-standard questions

All persons will wash hands with soap and water upon admittance

Students and faculty will participate in sanitation and cleaning of equipment and workspace at the conclusion of each session

Students are encouraged to:

- Log in to Canvas and communicate with your faculty as needed.
- Study and complete assignments in a timely manner
- Ask questions along the way

Grayson College is not responsible for illness/injury that occurs during the normal course of classroom/lab/clinical experiences.

These descriptions and timelines are subject to change at the discretion of the Professor.

You will be asked to sign the following during class:

Waiver of Liability
As a Science student in a Grayson College laboratory course, I hereby confirm that I have been advised of laboratory safety measures and rules and agree to comply with these rules at all times during my enrollment in this laboratory course. In addition, I agree to hold harmless GC in any event resulting from the laboratory environment.

Printed Name:_____

Signed Name: _____ Date:_____

Contact Lenses
I am aware of the added health risks associated with wearing contact lenses in the lab, but have elected to do so against the advice of my instructor. (If unsigned, I have agreed not to wear contact lenses at any time during this course.)

Printed Name:_____

Signed Name: _____ Date:_____

Student Responsibility
You have already made the decision to go to college; now the follow-up decisions on whether to commit to doing the work could very well determine whether you end up working at a good paying job in a field you enjoy or working at minimum wage for the rest of your life. Education involves a partnership that requires both students and instructors to do their parts. By entering into this partnership, you have a responsibility to show up for class, do the assignments and reading, be engaged and pay attention in class, follow directions, and put your best effort into it. You will get out of your experience here exactly what you put into it – nothing more and nothing less.