GRAYSON COLLEGE

Course Syllabus

Course Information
BIOL 2120 Microbiology
Sections:
Spring 2017
Face-to-Face course, Laboratory meets 3 hours/week, Testing conducted on campus in the classroom

Professor Contact Information

Instructor/Professor:	Richard Weart
Office Phone:	903-463-8667
Science Department Phone:	903-463-8797
e-mail:	weartb@grayson.edu
Office Location:	S105C
Office Hours:	MW: 11:30am-1:00pm
	TR: 12:15pm-1:00pm, 2:15pm-3:00pm
	F: 10:00am-2:00pm

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 Blackboard accounts for directions on where or how to continue their coursework.

Outline of Topics Covered

January 17 - 19	Laboratory Safety p.1, Experiment: Introduction to the Light Microscope p.143
January 24 - 26	Experiment: Bacterial Motility: Wet Mount and the **Hanging Drop Preparations** p.211
Jan. 31 – Feb. 2	Bacterial Smear (p.178) and the **Gram Stain** p.187
February 7 - 9	Common Aseptic Transfers and Inoculation Methods p.26, Streak Plate Method of Isolation p.45, Colony Morphology p.67, and Growth Patterns in Broth p.83.
February 14 - 16	Streak Plate Method of Isolation p.45, Selective and Differential Media: Phenylethyl Alcohol Agar p.229, Mannitol Salt Agar p.241, MacConkey Agar p.247, and EMB Agar p.255.
February 21 - 23	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. Standard Plate Count p. 411.
Feb. 28 – Mar. 2	Antimicrobial Susceptibility Testing (The Kirby Bauer Method) p.447
March 7	Midterm review
March 9	**Midterm Exam**
March 13 - 17	Spring Break
March 21 - 23	Tests detecting Hydrolytic Enzymes: Starch Hydrolysis p.331, Urea Hydrolysis p.353, Casein Hydrolysis p.345, Lipid Hydrolysis p.341.
March 28 - 30	"Carbohydrate Fermentation" Phenol Red Broth p.279. IMViC Test: : SIM (Indole) p.365, Methyl Red /Voges-Proskauer

	p.287, Citrate p.313, Hydrogen Sulfide Test p.365
April 4 - 6	Respiration: Catalase Test p.257, Oxidase Test p.262. Decarboxylation Test p.279, Phenylalanine Deaminase Test p.283, Nitrate Reduction Test p.267
April 11 - 13	Species Identification of Unknown Bacterial Cultures
April 18 - 20	Species Identification of Unknown Bacterial Cultures
April 25	Unknown Reports Due
April 27	**Final Exam**

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:	January 17, 2017
Last day to add/change courses:	January 17th to 20th
Spring Break NO CLASSES	March 13th to 17th
Professional Development Day (no classes)	March 24, 2017
Application for graduation	March 31, 2017
Last day to drop/withdraw from course:	April 18, 2017
Lecture Final Exams:	May 8th to 11th

Methods of Evaluation

Each week students will take a graded quiz. Quizzes may not be made-up. **A gram stain 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 10% 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. **Each student will receive a test tube containing unknown types of bacteria that must be identified within two weeks. Unknown lab reports are due at the beginning of lab on Tuesday the week after completing unknowns**. Late gram stains, hanging drops and unknown reports will not be accepted. Students will take objective (multiple choice, true/false, matching) midterm and final exams as scheduled. Students who cannot make the midterm exam or 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:
Quizzes will constitute 20% of the final lab grade. The practical grade for the gram stain (evaluated for smear thickness and, for color, contrast, and consistency) and the hanging drop

constitute 10% of the final lab grade. The grade for the unknown report (evaluated for techniques performed, decisions made and problem solving, as well as results/outcome) will constitute 20% of the final lab grade. The average of the mid term and final exams will constitute 50% 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

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. Regina Organ, Title IX Coordinator (903-463-8714)
- § Dr. Dava Washburn, Title IX Coordinator (903-463-8634)
- § Dr. Kim Williams, Title IX Deputy Coordinator- South Campus (903) 415-2506
- § 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 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.

Grayson College campus-wide student policies may be found in each Canvas course shell under the menu item "Student Services".