

# **MICR 201: ELEMENTARY MICROBIOLOGY SPRING 2019**

## **4 CREDIT HOURS**

**Course objectives/description.** To provide the student with an understanding of the basic concepts and methodology of the discipline of microbiology. This includes: 1.) taxonomy, genetics, metabolism, pathogenicity and control of microorganisms that affect human health, and 2.) hands-on experience in a laboratory using the basic techniques that are commonly employed in a microbiology laboratory.

**LECTURE** Lawson Hall, Room 171, 8:00-8:50 M, W, F

<b>INSTRUCTOR</b>	<b>OFFICE</b>	<b>OFFICE HOURS</b>
Dr. Scott D. Hamilton-Brehm	Life Science III, Rm 1009 453-3818 Scott.Hamilton-Brehm@siu.edu	W 10:00-12:00 or by appointment

### **TEXT BOOK (REQUIRED)**

Foundations in Microbiology 10th edition. 2018. Kathleen P. Talaro and Barry Chess Available at the University Bookstore and other Carbondale textbook stores. Options include: 1) hard bound, 2) loose leaf, or 3) Web book.

### **FINAL COURSE GRADE (Lecture + Lab = 800 total possible points)**

A	720 - 800 points	(90-100%)
B	640 - 719	(80-89%)
C	560 - 639	(70-79%)
D	480 - 551	(60-69%)
F	0 - 479	(0-59%)

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### **LECTURE GRADES**

Three hourly exams (100 points each) will be given during the semester (see schedule, next page). The final exam will be a comprehensive exam (200 points) during the last week of the semester. If you must miss one of the hourly exams, it is your responsibility to schedule a make-up test with the instructor (Note: the make-up test will be more difficult than the hourly test).

Hourly exams	300
Final exam	200 comprehensive
Total points from lecture:	500 (62.5% of course total)

## **Tips for studying for exams**

Come to lecture! I **WILL NOT** post the lecture slides on D2L. Develop your note taking skills, you are welcome to use your smart phone to take pictures of the slides. Start studying early! Reviewing lecture material as soon as possible after the lecture is the best way to study for this course. The test questions will come almost entirely from the lectures. Use the textbook as a resource to provide further information to support and expand upon lecture material.

Pay particular attention to “key points” in the lectures, more material can be found in the text. If the subject is still not clear it is your responsibility to find the answers! i.e. Visit office hours, go to a study group, ask a classmate, etc. You will succeed in this class by reviewing the notes, studying the concepts, asking questions, and staying on top of the material.

## **Extra-Credit**

In the lecture slides, the instructor will have references to primary scientific papers at the bottom of the slides for readers to guide them to the citable material supporting what is being lectured in class. Every lecture day there will be a citation that does not support the topic (>40 of them). If you catch one of these bogus citations, you must be one of the **first 5 students to PRINT OUT THE ABSTRACT**

(the first page which has the title, authors and description of the paper), highlight the part you think proves this is a bad reference for the topic and turn it in to Dr. Hamilton-Brehm **before the START OF NEXT lecture (i.e. if the lecture which you notice the bad citation is on Monday, you must turn it in on weds. If a bad citation shows up on Friday, then Monday is when you tunr it in)**

Be prepared to explain why this reference is not a good one. This extra credit is worth 50 extra points! (Half a test grade!). This extra credit is only available to each person ONCE, you are ineligible after you get it. These non-supporting references will only appear in lecture. You have to come to lecture to play.

# MICR 201 LECTURE SCHEDULE SPRING 2019

WEEK	DATE	Chapter/Topic	EXAMS
1	Jan 14, 16, 18	1 & 2 - Introduction, Origin, & Chemistry	
2	Jan 23, 25	1 & 2 - Chemistry, History & Tools of Microbiology No class on MLK Mon	
3	Jan 28, 30 Feb 1	3 & 4 - Prokaryotes & Tools of Research	
4	Feb 4, 6, 8	4 & 9 - Prokaryotes & Sequence Hypothesis	<b>Exam 1 (Fri. 2/9)</b>
5	Feb 11, 13, 15	5 & 6 - Eukaryotes & Viruses	
6	Feb 18, 20, 22	7 & 8 - Metabolism	
7	Feb 25, 27 Mar 1	26 - Environmental Microbiology	
8	Mar 4, 6, 9	10 - Genetic Engineering	<b>Exam 2 (Fri. 3/9)</b>
9	Mar 11, 13, 15	<b>Spring Break</b>	
10	Mar 18, 20, 22	11 & 13 - Microbial Control	
11	Mar 25, 27, 29	12 - Drugs and Poisons: Chemotherapy	
12	Apr 1, 3, 5	13 - Infection and Disease	
13	Apr 8, 10,12	14 - Host Defenses	<b>Exam 3 (Fri. 4/13)</b>
14	Apr 15, 17, 19	15 - Immunity & Immunization	
15	Apr 22, 24, 26	18 to 21 - Selected Bacterial Diseases	
16	Apr 29 May 1, 3	22 to 25 - Selected Fungi, Parasites, and Viruses Diseases Review Session	
17	May 6-10	To be announced	<b>Final Exam</b>

# MICR 201 LABORATORY

## Life Science II room number 113

Sections 1: 10:00-11:50 W and 10:00-10:50 F  
Sections 4: 12:00-1:50 W and 1:00-1:50 F  
Sections 5: 9:00-10:50 Tu and 9:00-9:50 Th  
Sections 7: 11:00-12:50 Tu and 11:00-11:50 Th

## Life Science II, room number 119

Sections 2: 10:00-11:50 W and 10:00-10:50 F  
Sections 3: 12:00-1:50 W and 1:00-1:50 F  
Sections 6: 9:00-10:50 Tu and 9:00-9:50 Th  
Sections 8: 11:00-12:50 Tu and 11:00-11:50 Th

TEACHING ASSISTANTS	SECTIONS	OFFICE	OFFICE HOURS	Email
Adam Horton	7/8	LS III, rm 1011	W: 12 – 2 P.M.	ahorton@siu.edu
Kyle Gruber	2, 3/4	LSII, rm 112	M & F: 12 – 2 P.M.	kyle.gruber@siu.edu
Erik Velkme	1, 5/6	LSII, rm 112	M: 9 – 11 A.M. W: 1 – 3 P.M.	erik.velkme@siu.edu

Take advantage of their availability. They are there to help you with lecture as well as laboratory related questions.

## MANUALS and SUPPLIES

**Laboratory Manual for Microbiology 201 (REQUIRED).** Available from **Printing Plant**, 608 South Illinois Avenue, 529-3115.

**Laboratory supplies (REQUIRED).** Lab coat or apron, black Sharpie pen, box of microscope slides, lens paper (not bibulous paper) and bound lab notebook (e.g. National Blank Book Co. composition book) must also be purchased (available in the bookstores). Safety glasses or glasses side shields are highly recommended for eye protection. Everyone MUST wear a buttoned **lab coat or lab apron** while in the Laboratory, **closed toed shoes**, and **long pants or skirts below the knees** must be worn at all times in the laboratory

**It is expected that lab coats, lab manuals, and lab notebooks are present by the second week of MICR 201 lab, failure to do so will result in 50 point deduction!**

**LABORATORY ATTENDANCE IS MANDATORY.** Attendance will be taken. There is no "short cut" method for learning microbiological techniques; you must be present and participate. Twelve points (plus any quiz points from the missed lab) will be deducted for each missed lab unless you provide **documented proof** of an acceptable excuse (illness or mandatory attendance at a university function). Any student who misses **THREE or more unexcused** lab periods will **LOSE 50 POINTS!!!! Missing three or more lab periods and failing to meet the aforementioned equipment requirements will result in a total deduction of 100 points!**

On every **Tues/Wed** (your 1st laboratory meeting each week) there will be a **10-point lab quiz** covering the **Purpose AND Procedure** for the current week's exercise(s). Fourteen lab quizzes will be given in total. **NO MAKEUPS Will Be Given. Quizzes are given during the first 10 minutes of lab, so if you are late, you will be allowed to take the quiz using only the time remaining of the first 10 minutes.**

## **LABORATORY NOTEBOOKS**

Notebooks will be due four times during the semester (see dates listed in the Lab Manual).

Lab notebooks are the means to rapidly record what was done, dates, data, and results.

Recording this information is part of your training and is necessary for jobs where patient care, reports, and legal records are required.

Part of your laboratory grade in Microbiology 201 will be based on the quality of your laboratory notebook. Below is a quick summary what your lab notebooks will be graded on (for full documentation see 2019 lab manual).

1. You must keep accurate, legible notes of your experiments
2. A laboratory notebook is a bound record book that serves as a central place for all of your data. **Spiral notebooks and loose-leaf folders are not acceptable.** Inexpensive notebooks are available from the bookstore; for example, a hard-covered composition book, e.g., one made by the National Blank Book Company will work well
3. Ball point ink must be used for recording all results or notes in your notebook (do not use gel ink as it will smear if liquid gets on your notebook). If you need to change an entry, neatly cross out the original. If your notebook doesn't have page numbers, put them in yourself. Save the first four pages of your notebook for a **TABLE OF CONTENTS**
4. Each exercise report should have five parts and answers to the review questions
  - I. PURPOSE: a brief description of what you are to observe and/or learn from the exercise
  - II. PROCEDURE: a brief description of what you do; you may refer to the lab manual protocol section instead of writing out details, but record any changes made
  - III. RESULTS: a clear description of your observations, including the date the observations were made
  - IV. CONCLUSIONS: what you can conclude from your data
  - V. REVIEW QUESTIONS: Give complete answers to the review questions

Points that can be earned for each exercise are based on notebook organization, answers to questions at the end of each exercise and how carefully you document your laboratory work. Since laboratory notebooks are written in hand, organism names can't be typed in italics (i.e. *Pyrococcus furiosus*). In the case with your written notebook remember to **UNDERLINE** the organism name (i.e. Pyrococcus furiosus). Point will be taken off if you do not underline them.

**If your notebook is one day late, 5 points will be deducted; if two days late 10 points will be deducted. After that, no points will be given for the notebook for that grading period.**

**Laboratory technique** will be a part of your laboratory grade. This will include points earned during a **laboratory practical exam** that will be scheduled with your TA. This exam is designed to test key microbiological skills you will develop by doing the weekly laboratory experiments, with an emphasis on principles of aseptic technique. The lab technique points will also include an evaluation of your use of laboratory time by your TA. You are expected to be in the laboratory and ready to work **promptly at the start time for your section** and to make good use of all three hours of lab time available to you each week. Difficulties with punctuality or attendance can result in the **loss of laboratory points**.

When Dr. Hamilton-Brehm is not in the room, the TAs have his authority. Follow their directions and/or requests. Do not argue with the TAs during lab period. If there is a problem, follow the directions your TA gives you and then discuss it with Dr. Hamilton-Brehm or the TA outside of class. This rule is primarily a safety precaution (there may be something inherently dangerous in the way you are doing something which is not obvious at the moment) but it is also a way to ensure that the lab runs smoothly for everyone. Your cooperation is appreciated.

<b>Laboratory Grades</b>	Notebook Lab Quizzes Lab Technique Total from Lab	(4 x 25) (14 x 10) 60 300 points (37.5% of course total)	100 140 60 300 points (37.5% of course total)
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## UNIVERSITY SUPPORT

### **Emergency procedures.**

Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on BERT's website at <http://www.bert.siu.edu>, Department of Safety's website <http://www.dps.siu.edu/> (disaster drop down) and in Emergency Response Guideline pamphlet.

Instructors will provide guidance to students in the classroom in the event of an emergency affecting your location. **It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency.** The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.

### **Academic Dishonesty**

The Student Conduct Code of SIU clearly spells out the University policy on Academic Dishonesty.

#### Definition of Academic Dishonesty

We define academic dishonesty to mean turning in material created by someone else and representing it as your own work or permitting others to represent your work as their own.

#### Penalty for Academic Dishonesty

- First offense: from a zero on the specific lab/assignment/project/exam to course grade of F.
- Second offense: from course grade of F to suspension from the school.
- Third offense: permanent suspension from the school.

Records of academic dishonesty will be maintained in the student's file in the school advisor's office, as well as in a master academic dishonesty file in the school director's office. When an incidence of academic dishonesty occurs, the faculty member will meet with the school director to discuss the situation and determine the appropriate penalty.