MICR 201: ELEMENTARY MICROBIOLOGY SPRING 2017
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

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

TEXT BOOK (REQUIRED)
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)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>712 - 800</td>
<td>(90-100%)</td>
</tr>
<tr>
<td>B</td>
<td>632 - 711</td>
<td>(80-89%)</td>
</tr>
<tr>
<td>C</td>
<td>552 - 631</td>
<td>(70-79%)</td>
</tr>
<tr>
<td>D</td>
<td>472 - 551</td>
<td>(60-69%)</td>
</tr>
<tr>
<td>F</td>
<td>0 - 471</td>
<td>(0-59%)</td>
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</tbody>
</table>

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 so often there will be a citation that does not support the topic (at least 20 of them) over the semester lecture time. 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.** Be prepared to explain why this reference is not a good one. This extra credit is worth 50 extra points! (Half a test grade!). Once you get this extra credit, you are ineligible for more extra credit points from this activity. These non-supporting references will only appear in lecture. You have to come to lecture to play.
<table>
<thead>
<tr>
<th>WEEK</th>
<th>DATE</th>
<th>Chapter/Topic</th>
<th>EXAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 17, 19</td>
<td>1 &amp; 2/ Introduction, Origin, &amp; Chemistry</td>
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<tr>
<td></td>
<td></td>
<td>No class on MLK Mon</td>
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</tr>
<tr>
<td>2</td>
<td>Jan 22, 24, 26</td>
<td>1 &amp; 2/ Chemistry, History &amp; Tools of Microbiology</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Jan 29, 3 Feb 2</td>
<td>3 &amp; 4/ Prokaryotes &amp; Tools of Research</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Feb 5, 7, 9</td>
<td>4 &amp; 9/ Prokaryotes &amp; Sequence Hypothesis</td>
<td>Exam 1 (Fri. 2/9)</td>
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<tr>
<td>5</td>
<td>Feb 12, 14, 16</td>
<td>5 &amp; 6/ Eukaryotes &amp; Viruses</td>
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</tr>
<tr>
<td>6</td>
<td>Feb 19, 21, 23</td>
<td>7 &amp; 8/ Metabolism</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Feb 26, 28 Mar 2</td>
<td>26/ Environmental Microbiology</td>
<td></td>
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<tr>
<td>8</td>
<td>Mar 5, 7, 9</td>
<td>10/ Genetic Engineering</td>
<td>Exam 2 (Fri. 3/9)</td>
</tr>
<tr>
<td>9</td>
<td>Mar 12, 14, 16</td>
<td>Spring Break</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Mar 19, 21, 23</td>
<td>11 &amp; 13/ Microbial Control</td>
<td></td>
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<tr>
<td>11</td>
<td>Mar 26, 28, 30</td>
<td>12/ Drugs and Poisons: Chemotherapy</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Apr 2, 4, 6</td>
<td>13/ Infection and Disease</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Apr 9, 11, 13</td>
<td>14/ Host Defenses</td>
<td>Exam 3 (Fri. 4/13)</td>
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<tr>
<td>14</td>
<td>Apr 16, 18, 20</td>
<td>15/ Immunity &amp; Immunization</td>
<td></td>
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<tr>
<td>15</td>
<td>Apr 23, 25, 27</td>
<td>18-21/ Selected Bacterial Diseases</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Apr 30 May 2, 4</td>
<td>22-25/ Selected Fungi, Parasites, and Viruses Diseases</td>
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<tr>
<td>17</td>
<td>May 7-11</td>
<td>Wednesday 9th, 8 am – 10 am</td>
<td>Final Comprehensive Exam</td>
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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

<table>
<thead>
<tr>
<th>TEACHING ASSISTANTS</th>
<th>SECTIONS</th>
<th>OFFICE</th>
<th>OFFICE HOURS</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam Horton</td>
<td>3 and 7</td>
<td>LS III, rm 1011</td>
<td>Mon 11 am – 12 pm</td>
<td><a href="mailto:ahorton@siu.edu">ahorton@siu.edu</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tues 2 pm – 3 pm</td>
<td></td>
</tr>
<tr>
<td>Azam Baharlouei</td>
<td>1 and 4</td>
<td>LS III, rm 1013</td>
<td>Weds 3 pm – 4 pm</td>
<td><a href="mailto:baharlouei@siu.edu">baharlouei@siu.edu</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fri 3 pm – 4 pm</td>
<td></td>
</tr>
<tr>
<td>Rui Xiao</td>
<td>5 and 8</td>
<td>Lindegren, rm 7</td>
<td>Tues 3 pm – 4 pm</td>
<td><a href="mailto:rxiao@siu.edu">rxiao@siu.edu</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Weds 3 pm – 4 pm</td>
<td></td>
</tr>
<tr>
<td>April Haskett</td>
<td>2 and 6</td>
<td>LS II, rm 101</td>
<td>Tues 11 am – 12 pm</td>
<td><a href="mailto:ahaskett11801@siu.edu">ahaskett11801@siu.edu</a></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Thurs 10 am – 11 am</td>
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</table>

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

MANUALS and SUPPLIES


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 an automatic 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 MORE THAN THREE lab periods for any reason good or bad, must see Dr. Hamilton-Brehm to regain entry to the lab.

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 2018 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.

**Laboratory Grades**

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notebook</td>
<td>(4 x 25)</td>
<td>100</td>
</tr>
<tr>
<td>Lab Quizzes</td>
<td>(14 x 10)</td>
<td>140</td>
</tr>
<tr>
<td>Lab Technique</td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>Total from Lab</td>
<td></td>
<td>300 points (37.5% of course total)</td>
</tr>
</tbody>
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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.
IMPORTANT DATES *
Semester Classes Begin: 01/16/2018
Last day to add full-term course (without Dean’s signature): 01/21/2018
Last day to withdraw from the University with a full refund: 01/26/2018
Last day to drop a full-term course for a credit/refund: 01/28/2018
Last day to drop a full-term course (W grade, no refund): 04/01/2018
Final examinations: 05/07–05/11/2018
The Final exam schedule will be posted the third week of class.

Please verify the above dates with the Registrar calendar and find more detailed information on deadlines at http://registrar.siu.edu/calendars. For add/drop dates that apply to shorter-than-full-term courses, please look at the Schedule of Classes search results at http://registrar.siu.edu/schedclass/index.php

SPRING SEMESTER HOLIDAYS
Martin Luther King, Jr.’s Birthday Holiday 01/15/2018
Spring Vacation 03/10—03/18/2018

WITHDRAWAL POLICY ~ Undergraduate only
Students who officially register for a session must officially withdraw from that registration in a timely manner to avoid being charged as well as receiving a failing grade for those classes. An official withdrawal must be initiated by the student, or on behalf of the student through the academic unit, and be processed by the Registrar’s office. For the proper procedures to follow when dropping courses and when withdrawing from SIU visit: http://registrar.siu.edu/students/withdrawal.php

INCOMPLETE POLICY ~ Undergraduate only
An INC grade may be assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments for the course. An INC must be changed to a completed grade within one full semester (undergraduates), and one full year (graduate students), from the close of the term in which the course was taken or graduation, whichever occurs first. Should the student fail to complete the remaining course requirements within the time period designated, the incomplete will be converted to a grade of F and such grade will be computed in the student’s grade point average. For more information visit: http://registrar.siu.edu/grades/incomplete.php

REPEAT POLICY
An undergraduate student may, for the purpose of raising a grade, enroll in a course for credit more than once. For students receiving a letter grade of A, B, C, D, or F, the course repetition must occur at Southern Illinois University Carbondale. Effective for courses taken Summer 2013 or later, only the most recent (last) grade will be calculated in the overall GPA and count toward hours earned. This policy will be applied to all transferrable credit in that only the last grade will be used to calculate grade point average. Only those courses taken at the same institution are considered repeats under this policy. See full policy at http://registrar.siu.edu/students/repeatclasses.php

GRADUATE POLICIES
Graduate policies often vary from Undergraduate policies. To view the applicable policies for graduate students, please refer to the graduate catalog at http://gradschool.siu.edu/about-us/grad-catalog/

DISABILITY POLICY
Disability Support Services provides the required academic and programmatic support services to students with permanent and temporary disabilities. DSS provides centralized coordination and referral services. To utilize DSS services, students must contact DSS to open cases. The process involves interviews, reviews of student-supplied documentation, and completion of Disability Accommodation Agreements. http://disabilityservices.siu.edu/

PLAGIARISM
See the Student Conduct Code http://srr.siu.edu/student-conduct-code/

ADVICEMENT: http://advisement.siu.edu/

SAFETY AWARENESS FACTS AND EDUCATION
Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here: http://safe.siu.edu

SALUKI CARES
The purpose of Saluki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, students and their families, SIU will continue to display a culture of care and demonstrate to our students and their families that they are an important part of the community. For Information on Saluki Cares: call (618) 453-1492, email siucares@siu.edu, or http://salukicares.siu.edu/

SIU’S EARLY WARNING INTERVENTION PROGRAM (EWIP)
Students enrolled in courses participating in SIU’s Early Warning Intervention Program might be contacted by University staff during a semester. More information can be found at the Core Curriculum’s Overview webpage: http://corecurriculum.siu.edu/program-overview/

EMERGENCY PROCEDURES
We ask that you become familiar with Emergency Preparedness @ SIU. Emergency response information is available on posters in buildings on campus, on the Emergency Preparedness @ SIU website, and though text and email alerts. To register for alerts visit: http://emergency.siu.edu/

STUDENT MULTICULTURAL RESOURCE CENTER
The Student Multicultural Resource Center serves as a catalyst for inclusion, diversity and innovation. As the Center continues its work, we are here to ensure that you think, grow and succeed. We encourage you to stop by the Center, located in Grinnell Commons, to see the resources available and discover ways you can get involved on the campus. Visit us at http://inclusiveexcellence.siu.edu/

LEARNING AND SUPPORT SERVICES
Help is within reach. Learning support services offers free tutoring on campus and math labs. To find more information please visit the Center for Learning and Support Services website:
Tutoring: http://tutoring.siu.edu/
Math Labs: http://math.siu.edu/courses/course-help.php

WRITING CENTER
The Writing Center offers free tutoring services to all SIU students and faculty. To find a Center or Schedule an appointment please visit: http://write.siu.edu/

DIVERSITY
Southern Illinois University Carbondale’s goal is to provide a welcoming campus where all of our students, faculty and staff can study and work in a respectful, positive environment free from racism and intimidation. For more information visit: http://diversity.siu.edu/

MILITARY COMMUNITY
There are complexities of being a member of the military community and also a student, and military and veteran related developments can complicate academic life. If you are a member of the military community and in need of accommodations please visit Veterans Services at http://veterans.siu.edu/

SIU ONLINE: https://online.siu.edu/

Need help with an issue? Please visit SALUKI SOLUTION FINDER at http://solutionfinder.siu.edu/

SIU ONLINE: https://online.siu.edu/

Office of the Provost http://pvcaa.siu.edu/ Spring 2018