INSTRUCTOR INFORMATION
Instructor: Tina Salmassi
Office Hours: Online TBD
Email: tsalmas@calstatela.edu
Labs: 81 M/T/W/R 9:30-10:45 ASCL 226 (Breanna Luna)
       82 M/T/W/R 11:00-12:15 ASCL 226 (Breanna Luna)

GE Category: GE Block B2

COURSE DESCRIPTION
Introductory course in microbiology designed for non-majors; content addresses the impact of microorganism on the human experience and the biosphere; laboratory application of selected procedures. No credit if taken after any other college microbiology.

COURSE OBJECTIVES/OUTCOMES
1. Learn how microbes affect our world
2. Recognize the diversity and ubiquity of microbes
3. Appreciate our relationship with microbes
4. Identify microbial structures and their functions
5. Understand the factors that control microbial growth
6. Appreciate the benefits of microorganisms in industrial, agricultural, environmental, biotechnological and food science processes
7. Understand the role microbes play in disease

Furthermore, consistent with expectations from the lower division General Education in the Natural Sciences students will also:
1. Think critically about experiments involving microbes.
2. Recognize when and what information is needed as related to microbiology.
3. Develop the ability to locate relevant information and evaluate its validity.
4. Extract accurate information related to microbiology from everyday sources.
5. Disseminate learned material by both oral and written communication methods.
6. Demonstrate an ability to work collaboratively
7. Demonstrate effective reading of primary and secondary sources of scientific information
8. Learn effective oral and written communication of scientific content
9. Integrate scientific knowledge into their everyday lives through project-based experiences
REQUIRED COURSE MATERIALS
MICR 1010 Laboratory Exercises Manual (compiled by TM Salmassi)


Good news: The textbook for this class is available for free online, in web view and PDF format! You can also purchase a print version, if you prefer, via the campus bookstore or from OpenStax on Amazon.com. You can use whichever formats you want. Web view is recommended -- the responsive design works seamlessly on any device. If you buy on Amazon, make sure you use the link on your book page on openstax.org so you get the official OpenStax print version. (Simple printouts sold by third parties on Amazon are not verifiable and not as high-quality.)

CLASSROOM PROTOCOL
MICR 1010 is designed to introduce students to microbiology and engage them as active participants in the scientific thinking and learning process. There is NO textbook for the lecture portion of this course and students are expected to develop their information literacy skills by looking up the terminology introduced in this course. Additional lecture content will come from assigned article readings. These readings will be made available to students via MOODLE (or "Modular Object-Oriented Dynamic Learning Environment"). Moodle allows faculty and students online access to sophisticated instructional tools such as discussion boards, assignments, wikis, blogs, online quizzes, file distribution, and more. You need to visit the Moodle website and become familiar with the interface. There is a REQUIRED laboratory manual for the course. All laboratory exercises and content are provided in this manual.

Cell phones must be turned off during the class time. Use of personal computers during class is restricted to course related activities only. Personal uses such as visiting social media sites, checking email, working on requirements for other classes, or browsing the Internet are not allowed. Attendance will be taken on occasion so don’t be late and don’t miss class.

COURSE STRUCTURE
This course is conducted in a hybrid format. You will participate in the course using Moodle for all the ONLINE LECTURE content. Laboratory exercises will be held four times each week FACE-TO-FACE as there is no online component to the labs.

COMPUTER REQUIREMENTS
You will need to have an up-to-date browser, operating system and some additional software on your computer to take this class. Check the ITS Helpdesk Student Resources page for instructions. Some of the documents in this course will be available to you in PDF form. You will need download and install Adobe Acrobat Reader software on your computer.
LABORATORY REQUIREMENTS
Students must provide their own laboratory coat and permanent marker. These items can be purchased at the student bookstore. Laboratory attendance is required. Experiments build on prior experiments so when you miss class you not only miss the content from that class but you put yourself at a disadvantage for other classes. Upon completion of laboratory experiments, you will complete the report associated with each laboratory exercise. These reports are due at the start of the next lab to your lab TA. Deadlines are also listed in the laboratory schedule at the end of this document. Please be mindful of report deadlines every Thursday.

ASSIGNMENTS AND GRADING POLICY
This course has both lecture and laboratory assignments. All assignments are either listed in the class schedule at the end of this document or will be announced in class or via Moodle along with any due dates or rubrics. You can view your grades at any time on Moodle and are encouraged to do so regularly. Laboratory reports are due in person on the dates shown in the schedule. You must turn in your completed lab report to your TA at the START of class. Lab reports submitted after the first 10 minutes of lab are considered “LATE” and will lose half the credit. Lab reports no submitted to your TA on the due date will NOT be accepted. Please stay on top of these reports as they are very important to your grade. Do NOT use laboratory time to complete the lab reports. Lecture assignments have due dates published via Moodle. Once these assignments close, they will NOT be reopened, NO EXCEPTIONS. All Moodle assignments are due on Sunday nights. There are two projects in this course. Details for these projects will be announced in lecture. No late projects are accepted.

Reading Assignments

Reading assignments are provided in the lecture and lab schedule at the end of this document. Please follow the assignments as listed. You must complete the reading PRIOR to coming to class on the day it is assigned.

**GRADING BREAKDOWN**

<table>
<thead>
<tr>
<th>Assignments – Lecture</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moodle Quizzes (14)</td>
<td>140</td>
</tr>
<tr>
<td>Moodle Worksheet (not to be turned in) + Quiz (30 pts, 10 pts)</td>
<td>40</td>
</tr>
<tr>
<td>Lecture Exams (2, 50 pts ea)</td>
<td>100</td>
</tr>
<tr>
<td>Lecture Final</td>
<td>150</td>
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</table>

<table>
<thead>
<tr>
<th>Assignments – Lab</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Reports (20, 10 pts each)</td>
<td>200</td>
</tr>
<tr>
<td>Laboratory Exams (2, 100 pts ea)</td>
<td>200</td>
</tr>
<tr>
<td>Laboratory Final (1)</td>
<td>100</td>
</tr>
<tr>
<td>Formal Lab Report Project (1)</td>
<td>70</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>

**GRADING SCALE**

A: 920 points or more
A-: 900 – 919 points
B+: 880 – 899 points
B: 820 – 879 points
B-: 800 – 819 points
C+: 780 – 799 points
C: 650 – 779 points
D: 590 – 649 points
F: less than or equal to 589 points
*Please do not rely on percentages calculated by Moodle. Rather, use your point total with the Grading Scale above.

**COURSE COMMUNICATION**
I will make every effort to communicate frequently with students through announcements and postings within the Moodle site. Post any questions or comments you have about the course content and/or requirements in the *Muddiest Point* forum. Questions of a more personal nature can be sent via email or Moodle Message.

As a student, you should expect to receive assignment feedback and responses to postings within 48 hours.

Additionally, your lab TA will announce their office hours and contact information. Make sure to take down this information.

**QUESTIONS**
In online courses it is normal to have many questions about things that relate to the course, such as clarification about assignments, course materials, or assessments. Please post these in the *Muddiest Point*.

**HELPFUL STUDENT RESOURCES**
Technical Resources
Information on CSULA technical support resources for students: [Technical Support]

Student Support Services
Information on CSULA student support resources for students: [Student Services]

Academic Support Services
Information on CSULA academic support resources for students: [Academic Support]

Moodle Mentor Site
Information for students on how to be a successful online student and how to use Moodle: [Moodle Mentor](Moodle Tutorials)

**COURSE AND UNIVERSITY POLICIES**
Student Handbook
Information on student rights and responsibilities, academic honesty, standards of conduct, etc., can be found in Schedule of Classes for the current quarter visit the Cal State LA [Schedule of Classes Information](under Policies and Procedures).

Dropping and Adding
Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Students should be aware of the current deadlines
and penalties for adding and dropping classes by visiting the [GET home page](http://www.registrar.calstatela.edu/newsandinformation).  

**Americans with Disabilities Act (ADA)**  
Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation. For more information visit the [Office for Students with Disabilities](http://web.calstatela.edu/univ/osd/atlc.php) home page.

**Academic Honesty/Student Conduct**  
Many incidents of plagiarism result from students’ lack of understanding about what constitutes plagiarism. However, you are expected to familiarize yourself with Cal State L.A.’s policy on plagiarism. All work you submit must be your own scholarly and creative efforts. Cal State L.A. plagiarism as follows: “At Cal State L. A., plagiarism is defined as the act of using ideas, words, or work of another person or persons as if they were one’s own, without giving proper credit to the original sources.” Please refer to the following resources regarding the Academic Policy ([Cal State LA Policies and Procedures on Academic Honesty definitions](http://www.registrar.calstatela.edu/newsandinformation)) and Student Conduct ([Appendix E - Student Conduct / Student Conduct Procedures](http://www.registrar.calstatela.edu/newsandinformation)).

**LECTURE SCHEDULE**

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topic</th>
<th>Assignment (Due)</th>
</tr>
</thead>
</table>
| **1** | **5-29 – 6/3** | **Resources:**  
Bad Science TED Talk – Ben Goldacre  
**Moodle:**  
1. Syllabus – Quiz  
2. Introduction – Quiz |
| **2** | **6/4 – 6/10** | **Reading:**  
Koch, R. (1876).  
**Moodle:**  
1. Microbiology – Historical Perspective Quiz  
2. Seeing the Unseen – Quiz |
| **3** | **6/11 – 6/17** | **Reading:**  
<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topics &amp; Readings</th>
</tr>
</thead>
</table>
| 4    | 6/18 – 6/24 | - Algae
- Protists

Reading: Carroll, S. B. (2012).

Moodle:
1. Algae – Quiz
2. Protists – Quiz |
| 5    | 6/25 – 7/1 | - Viruses
- Life and Growth


Moodle:
1. Viruses – Quiz
2. Life and Growth – Quiz |
| 6    | 7/2 – 7/8 | Lecture Exam

Moodle: Lecture Exam (opens on 7/2 at 5 AM, closes at 11:59 PM, 50 minutes long) |
| 7    | 7/9 – 7/15 | - Microbial Control
- Fungi

Reading: Fleming, A. (1929).

Moodle:
1. Microbial Control – Quiz
2. Fungi – Quiz |
| 8    | 7/16 – 7/22 | - Food Microbiology
- Microbes in Agriculture

Reading: Nemeck, S. (2001)

Moodle:
1. Food Microbiology – Quiz
2. Microbes in Agriculture – Quiz |
| 9    | 7/23 – 7/29 | - Biotechnology
- Vaccines Worksheet
- Microbes and the Environment

Reading: Barringer, F. (2012).
Mallin, M.A. (June 2006). |
<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Moodle:</th>
<th>Reading:</th>
<th>Moodde:</th>
</tr>
</thead>
</table>
| 10   | 7/30 – 8/5 | 1. Microbial Ecology  
2. The Immune System  
2. The Immune System – Quiz  
3. Diagnosing Diseases Worksheet and Quiz |
<p>| 11   |          | Cumulative Lecture Final (Online)                                      |                                                                         | Lecture Final (opens on 08/07 at 5 AM, closes at 11:59 PM, 100 minutes long) |</p>
<table>
<thead>
<tr>
<th>Week</th>
<th>Lab</th>
<th>Assignments (Due)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5/29 – 5/31</td>
<td>MON No Lab</td>
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<tr>
<td></td>
<td>TUE Enrollment Issues</td>
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<tr>
<td></td>
<td>WED Lab Safety and Housekeeping</td>
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<tr>
<td></td>
<td>THUR Lab #1: Aseptic Technique (Period 1)</td>
<td>Reading: Lab #1: Aseptic Technique</td>
</tr>
<tr>
<td>2</td>
<td>6/4 – 6/7</td>
<td>MON Lab #1: Aseptic Technique (Period 2) Lab #2: Pure Culture Techniques</td>
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<tr>
<td></td>
<td>TUE Lab #2: Pure Culture Techniques (Period 2)</td>
<td>Reading: Lab #3: Brightfield Microscopy</td>
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<td>WED Lab #3: Brightfield Microscopy</td>
<td>Reading: Lab #3: Brightfield Microscopy</td>
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<tr>
<td></td>
<td>THUR Lab #4: Microscopy of Pond Water</td>
<td>Reading: Lab #4: Microscopy of Pond Water Lab Reports: Lab #1: Aseptic Technique Lab #2: Pure Culture Techniques Lab #3: Brightfield Microscopy</td>
</tr>
<tr>
<td>3</td>
<td>6/11 – 6/14</td>
<td>MON Lab #5: Smear Preparation Lab #6: Simple Staining</td>
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<td>TUE Lab #7: Negative Staining</td>
<td>Reading: Lab #7: Negative Staining</td>
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<tr>
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<td>WED Lab #8: Gram Staining</td>
<td>Reading: Lab #8: Gram Staining</td>
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<tr>
<td></td>
<td>THUR Lab #9: Capsular Staining</td>
<td>Reading: Lab #9: Capsular Staining Lab Reports: Lab #4: Microscopy of Pond Water Lab #5: Smear Preparation Lab #6: Simple Staining Lab #7: Negative Staining</td>
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<tr>
<td>Week</td>
<td>Monday</td>
<td>Tuesday</td>
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<tr>
<td>4/18 - 4/21</td>
<td>Lab #10: Spore Staining</td>
<td>Review</td>
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<tr>
<td>7/2 - 7/5</td>
<td>Lab #14: Water Activity and Osmotic Pressure (Period 1)</td>
<td>Lab #14: Water Activity and Osmotic Pressure (Period 2)</td>
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**Reading:**
- Lab #10: Spore Staining
- Lab #11 Ubiquity of Bacteria
- Lab #12: The Fungi: Molds and Yeasts
- Lab #13: pH and Microbial Growth
- Lab #14: Water Activity and Osmotic Pressure
- Lab #17: Temperature

**Lab Reports:**
- Lab #8: Gram Staining
- Lab #9: Capsular Staining
- Lab #10: Spore Staining
- Lab #11: Ubiquity of Bacteria
- Lab #12: The Fungi: Molds and Yeasts
- Lab #13: pH and Microbial Growth
- Lab #14: Water Activity and Osmotic Pressure
- Lab #17: Temperature
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<tr>
<th>Week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td>7/9 – 7/12</td>
<td>Lab #17: Temperature (Period 2)</td>
<td>Lab #15: Evaluation of Alcohol (Period 1)</td>
<td>Lab #15: Evaluation of Alcohol (Period 2)</td>
<td>Review</td>
</tr>
<tr>
<td></td>
<td>Reading: Lab #15: Evaluation of Alcohol</td>
<td>Lab Reports: Lab #17: Temperature</td>
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<tr>
<td>7/16 – 7/19</td>
<td>Lab Exam #2</td>
<td>Lab #16: Ultraviolet Light: Lethal Effects (Period 1)</td>
<td>Lab #16: Ultraviolet Light: Lethal Effects (Period 2)</td>
<td>Lab #18: Antimicrobial Sensitivity Testing (Period 1)</td>
</tr>
<tr>
<td></td>
<td>Reading: Lab #16: Ultraviolet Light: Lethal Effects</td>
<td>Reading: Lab #18: Antimicrobial Sensitivity Testing</td>
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<tr>
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<td>Lab Report: Lab #15: Evaluation of Alcohol Lab #16: Ultraviolet Light: Lethal Effects</td>
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<tr>
<td>7/23 – 7/26</td>
<td>Lab #18: Antimicrobial Sensitivity Testing (Period 2)</td>
<td>Lab #19: Bacterial Examination of Water (Period 1)</td>
<td>Lab #19: Bacterial Examination of Water (Period 2)</td>
<td>Lab #19: Bacterial Examination of Water (Period 3)</td>
</tr>
<tr>
<td></td>
<td>Reading: Lab #19: Bacterial Examination of Water</td>
<td>Lab Report: Lab #18: Antimicrobial Sensitivity Testing</td>
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<tr>
<td>7/30 – 8/2</td>
<td>Lab #20: Bacterial Counts of Food (Period 1)</td>
<td>Lab #20: Bacterial Counts of Food (Period 2)</td>
<td>Review</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lab Reports: Lab #19: Bacterial Examination of Water Lab #20: Bacterial Counts of Food Formal Lab Report</td>
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