Instructor: Dr. Laurie Achenbach  
Phone: 536-6666 (Neckers 157)  
Email: laurie@cos.siu.edu  
Office hours: W 2:00-3:00 p.m. (Neckers 157) or by appointment

Objective: This course will train students to analyze and present research in microbiology and related fields. This course will also develop professional interview and communication skills.

Format:  
I. Students will attend and critique life science (Microbiology, Physiology, Plant Biology, Zoology or Ecology) research seminars on campus and will prepare written evaluations of these seminars.  
II. Students will prepare an employment career resume and cover letter. Students will be evaluated by Career Services in a mock interview.  
III. Students will prepare and present two oral presentations on a current research topic.

I. Students will attend and critique life science (Microbiology, Physiology, Plant Biology, Zoology or Ecology) research seminars on campus and will prepare written evaluations of these seminars.

During the semester, MICR 495 students must attend at least four (4) sponsored seminars in the Molecular Biology, Microbiology, and Biochemistry (MBMB 597) seminar series or any life science research seminar on campus and submit a written critique of any four (4) of the seminars attended. The critique must be two to three pages in length (double spaced, 12 pt font) and answer the following questions:

1. What was the name of the speaker and the sponsoring unit on campus?  
2. What was the topic of the seminar?  
3. Did the speaker adequately introduce the material?  
4. What was the speaker's hypothesis/goal concerning his or her research?  
5. What were the important experimental results?  
6. Did the speaker summarize and draw clear conclusions?  
7. What was your overall opinion of the seminar?  
8. How could the speaker have improved the seminar?  
9. Taking into account that these are professional seminars and are directed to a specialized, trained audience rather than to the general public, what grade (A, B, C, D, or F) would you give the seminar speaker and why?
Critiques must be submitted via email to Dr. Achenbach (laurie@micro.siu.edu). Each critique must received by 4:30 pm on the following assigned dates:

- **Critique #1:** **Wednesday, February 10**
- **Critique #2:** **Wednesday, March 9**
- **Critique #3:** **Wednesday, March 30**
- **Critique #4:** **Wednesday, April 27**

Failure to submit all written critiques will result in an unsatisfactory (U) grade.

**II. Students will prepare an employment career resume and cover letter. Students will be evaluated by Career Services in an in-person mock interview.**

Students will prepare a one-page resume/curriculum vitae with a short cover letter. Students will work through Career Services to complete the mock interview program (http://careerservices.siu.edu/students/interview/index.html) by conducting a virtual mock interview then scheduling/conducting an in-person mock interview. The interview will be geared toward filling a technical, entry-level life sciences position. The position advertisement can be found at the end of the syllabus. The interview critique will be transmitted to the student as well as to Dr. Achenbach.

The one-page resume and cover letter must be turned in to Dr. Achenbach at the class meeting on **Wednesday, January 27**. Your in-person mock interview must be completed before **Wednesday, March 23**.

InterviewStream, available through Career Services (http://careerservices.siuc.edu/), allows you to digitally record a practice interview before you schedule your in-person mock interview. Career Services also holds a number of workshops to perfect your resume writing or interview skills. A calendar of events can be found online at http://careerservices.siu.edu/events/index.html.

Failure to complete a satisfactory in-person mock interview in a timely manner will result in an unsatisfactory (U) grade.

**III. Students will prepare and present two oral presentations on a current microbiology research topic.**

Each student must make two presentations. You will deliver one short 8-10 minute overview seminar early in the semester and expand upon this in a longer 20-25 minute seminar later in the semester. Your seminars must be based on a single research topic. Your undergraduate research would be an appropriate topic. If you are not doing microbiology-related research or would rather give a seminar on another topic, you must choose a recently published primary research paper in the field of microbiology and develop your seminar around this paper (see List of Suggested Journals below). A pdf of the research paper on which you will base your presentations MUST be
submitted by email to Dr. Achenbach by 4:30 pm Wednesday, February 3. You will, of course, need to find related papers to supplement the original paper.

Your short seminar will be an introduction to the topic. No data, materials and methods, or results should be presented during this talk. It should include the most relevant introductory information on the topic you have chosen. Dr. Achenbach will provide short verbal and written critiques of your seminar. These critiques are to be used to improve your presentation style for your longer 20-25 minute seminar that should include data (results), discussion, conclusions, and significance. The 8-10 minute presentations will be given on February 17 and March 2 at the class meetings. The 20-25 minute seminars will be given from March 30-April 13 at the class meetings.

Failure to present both seminars in a satisfactory manner will result in an unsatisfactory (U) grade.

HINTS FOR PRESENTATIONS:

1. **Seminars should be presented with Powerpoint.** The LSIII auditorium has multiple computer capabilities. Keep in mind that for your 20-25 minute seminar, only a certain number of Powerpoint slides can be digested by the audience. The exact number of slides depends on how much material you have on each. As a general rule, you need no more than one slide per minute of your presentation. If slides are complex, even fewer are necessary.

2. **Practice your talks so you know that the timing is correct.** Practice makes perfect. The more familiar you are with your topic and your Powerpoint, the better your seminar will be. If you practice your seminar alone, recording or video recording your talk may be helpful. Alternatively, practice your talk in front of other students. They can provide direct input to improve your talk.

CLASS SCHEDULE: Class will meet on the UNDERLINED dates only.

<table>
<thead>
<tr>
<th>Date</th>
<th>Item</th>
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<tbody>
<tr>
<td>Jan 20</td>
<td>Class introduction</td>
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<tr>
<td>Jan 27</td>
<td>Resume and cover letter due at the class meeting. Deadline for arranging mock interview (write your appointment time in the top left-hand corner of your resume).</td>
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<tr>
<td>Feb 3</td>
<td>Digital copy of research paper is due</td>
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<td>Feb 10</td>
<td>Seminar critique #1 is due</td>
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<tr>
<td>Feb 17</td>
<td>8-10 minute student seminars (8 students)</td>
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<td>Mar 2</td>
<td>8-10 minute student seminars (8 students)</td>
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<td>Mar 9</td>
<td>Seminar critique #2 is due</td>
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<td>Mar 23</td>
<td>Deadline for completed in-person mock interview</td>
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<td>March 30</td>
<td>20-25 minute student seminars (6 students) seminar critique</td>
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<td>March 30</td>
<td>Seminar critique #3 is due</td>
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<td>April 6</td>
<td>20-25 minute student seminars (6 students)</td>
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April 13 20-25 minute student seminars (4 students)
April 27 Seminar critique #4 is due

GRADES:
Grades in this course are Satisfactory/ Unsatisfactory (S/U) and will be based on these factors:

(1) **Attendance (10%)**. YOU MUST ATTEND ALL CLASSES ON THE UNDERLINED DATES. Failure to attend all classes will result in an unsatisfactory (U) grade.

(2) **Seminar Critiques (20%)**. The quantity and quality of your written seminar critiques must be satisfactory. Unsatisfactory critiques will be returned for revision, with a deadline. Failure to revise critiques satisfactorily will result in an unsatisfactory (U) grade.

3) **Resume/ mock interview (15%)**. YOU MUST SATISFACTORILY COMPLETE THE RESUME, COVER LETTER, AND MOCK INTERVIEW PROCESS. Failure to satisfactorily complete the process will result in an unsatisfactory (U) grade.

(4) **Your Seminars** (short-15%; long-40%): Dr. Achenbach will judge the quality of your presentations, including the amount of **effort** you have put into this project. In addition, unusually short or long seminars will be penalized. Failure to satisfactorily present both seminars will result in an unsatisfactory (U) grade.

To receive a "Satisfactory", you must complete ALL assignments and earn at least 70%.

LIST OF SUGGESTED JOURNALS:
- Journal of Bacteriology (http://jb.asm.org/)
- Current Opinion in Microbiology (http://www.journals.elsevier.com/current-opinion-in-microbiology/)
- Applied and Environmental Microbiology (http://aem.asm.org/)
- Environmental Microbiology (http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%2921462-2920)
- Molecular Microbiology (http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%29291365-2958)
- Nature Reviews, Microbiology (http://www.nature.com/nrmicro/index.html)
- Microbiology and Molecular Biology Reviews (http://mmb.asm.org/)
- Journal of Clinical Microbiology (http://jcm.asm.org/)
- Systematic and Applied Microbiology (http://www.journals.elsevier.com/systematic-and-applied-microbiology/)
- Microbial Ecology (http://link.springer.com/journal/248)

RESEARCHER I: The Department of Microbiology has a term (100%) Researcher I position available beginning June 1, 2016. Minimum qualifications are a BA/BS degree in microbiology, biochemistry, molecular biology, or a related science. Experience in culturing bacteria, RNA isolation, PCR, cloning, and hybridizations is desired as is familiarity with word processing programs and spreadsheet applications. Qualified candidates should send two letters of reference, curriculum vitae/resume, and transcripts to: Dr. Laurie Achenbach, Department of Microbiology, Mailcode 6508, Southern Illinois University Carbondale, Carbondale, IL 62901 (laurie@micro.siu.edu). Applications will be accepted until the position has been filled.

SIUC is an equal opportunity /affirmative action employer that strives to enhance its ability to develop diverse faculty and staff and to increase its potential to serve a diverse student population. All applications are welcomed and encouraged and will receive consideration.
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: (618) 453-5714, or siucares@siu.edu, http://salukicares.siu.edu/index.html

EMERGENCY PROCEDURES
Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. We ask that you become familiar with the SIU Emergency Response Plan and Building Emergency Response Team (BERT) programs. Emergency response information is available on posters in buildings on campus, available on BERT's website at www.bert.siu.edu, Department of Safety’s website at www.dps.siu.edu (disaster drop down) and the Emergency Response Guideline pamphlet. Instructors will provide guidance and direction 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.

INCLUSIVE EXCELLENCE
SIU contains people from all walks of life, from many different cultures and sub-cultures, and representing all strata of society, nationalities, ethnicities, lifestyles, and affiliations. Learning from and working with people who differ is an important part of education as well as an essential preparation for any career. For more information please visit: http://www.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/

AFFIRMATIVE ACTION & EQUAL OPPORTUNITY
Our office's main focus is to ensure that the university complies with federal and state equity policies and handles reporting and investigating of discrimination cases. For more information visit: http://diversity.siu.edu/

Additional Resources Available:
SALUKINET:  https://salukinet.siu.edu/login/ CP