

MICROBIOLOGY 495
Senior Seminar
Spring, 2018
W 3:00 - 5:30 p.m.
Life Science III Auditorium

Instructor: Dr. Kelly Bender
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Office hours: W 2:00-3:00 p.m. 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.
- III. Students will be evaluated by Career Services in a mock interview.
- IV. 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. A link to potential seminar courses will be provided on D2L. 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 D2L. Each critique must be received by 4:30 pm on the following assigned dates:

- Critique #1: **Wednesday, February 14**
- Critique #2: **Wednesday, March 21**
- Critique #3: **Wednesday, April 11**
- Critique #4: **Wednesday, May 2**

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 prepare a one-page resume/curriculum vitae with a short cover letter. Examples can be found on Career Services website (<http://careerservices.siu.edu/students/resume-cover.php>). Career Services also provides videos on how to prepare resumes (<http://careerservices.siu.edu/students/videos.php>).

- The one-page resume and cover letter (in pdf form) must be turned in to D2L by 4:30 pm on **Wednesday, January 31**.

III. Students will be evaluated by Career Services in an in-person mock interview.

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. Bender. Videos that provide help regarding interviews are also available on the Career Services website (<http://careerservices.siu.edu/students/videos.php>).

- Your in-person mock interview must be completed before **Wednesday, March 28**. Do not forget that you must complete the virtual interview first!

InterviewStream, available through Career Services (<http://careerservices.siu.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/calendar%20of%20events/>

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

IV. 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 to D2L by 4:30 pm Wednesday, February 7.** 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. Bender 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 **Feb. 21st - March 7th** at the class meetings. The 20-25 minute seminars will be given from **April 4-April 25** 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 or an equivalent program.** The LSIII auditorium has multiple computer capabilities. Keep in mind that for your 20-25 minute seminar, only a certain number of 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.

<u>Date</u>	<u>Item</u>
<u>Jan 17</u>	Class introduction
<u>Jan 24</u>	Discussion of resume and presentation tips, scheduling of seminars (~50 min)
<u>Jan 31</u>	Due by 4:30 pm: Resume and cover letter; Deadline for arranging mock interview (indicate appointment time in the top left-hand corner of resume).
<u>Feb 7</u>	Due by 4:30 pm: Digital copy of research paper
<u>Feb 14</u>	Due by 4:30 pm: Seminar critique #1
<u>Feb 21</u>	8-10 minute student seminars (8 students)
<u>Feb 28</u>	8-10 minute student seminars (8 students)
<u>Mar 7</u>	8-10 minute student seminars (8 students)
<u>Mar 14</u>	Spring Break
<u>Mar 21</u>	Due by 4:30 pm: Seminar critique #2

Mar 28	Deadline for completed in-person mock interview
<u>April 4</u>	20-25 minute student seminars (6 students)
<u>April 11</u>	20-25 minute student seminars (6 students) Seminar critique #3 due
<u>April 18</u>	20-25 minute student seminars (6 students)
<u>April 25</u>	20-25 minute student seminars (6 students)
May 2	Due by 4:30 pm: Seminar critique #4

GRADES:

Grades in this Satisfactory/ Unsatisfactory (S/U) course 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. During class seminar presentations, you will also be asked to complete anonymous evaluation forms for each speaker.

(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. Bender 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 $\geq 70\%$.

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/>)

Frontiers in Microbiology (<https://www.frontiersin.org/journals/microbiology>)

Environmental Microbiology ([http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1462-2920](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1462-2920))

Molecular Microbiology (<http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%291365-2958>)

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/>)

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, 2018. 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. Kelly Bender, Department of Microbiology, Mailcode 6508, Southern Illinois University Carbondale, Carbondale, IL 62901 (benderk@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.**