

MB490 Microbiology Capstone Experience Fall 2018

Class: Thursday 10-11:50 (CRN # 15249), Nash 404

Instructor: Dr. Kate Field
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Office hours: By appointment

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2 credits, P/N This course combines approximately 60 hours of instruction, activities and assignments, for 2 credits. Prerequisites (enforced): MB302 General Microbiology and Junior/Senior Standing

Course Description: Capstone experience for microbiology students to synthesize microbiology knowledge and skills, and practice professional skills necessary to sustain a career in science. Students will explore career opportunities and learn how to successfully compete for jobs. Students will work in teams to analyze a topical problem in microbiology and communicate this analysis in a presentation.

Learner Outcomes: Students will be able to:

1. Analyze a topical problem in microbiology.
2. Apply research data to support the analysis.
3. Create a presentation, both verbal and visual, to communicate the research analysis.
4. Distinguish misleading use of data and statistics.
5. Practice professional skills in teamwork situations.
6. Recognize and contrast/compare acceptable professional practices.
7. Acquire an understanding of the professional opportunities available in science.
8. Produce a science specific application packet for an activity beyond college.

Assessment of Learning Outcomes (Grading):

All assignments and in-class activities will be graded Pass/No Pass. As long as you complete the assignment, hand it in on time, and make a good-faith effort to do a good job on it, you will get a Pass. You will receive a No Pass if you don't do it, hand it in late or incomplete, or if it appears to us that you did not make a good-faith effort to follow the assignment and do a good job. Gray areas: in some cases we may hand it back and ask for revision. You will receive written feedback/suggestions on most written assignments.

To achieve a Pass:

1. Attend class (on time) and stay the entire class period. One class miss is allowed. More than one class miss, failure to stay the entire class period, or failure to complete all assignments on time will result in a no-pass. Even if you miss class, you must arrange to hand in your homework assignments—if they will be late, talk to the instructor.
2. Hand in completed assignments at the beginning of class period on the day they are due. Late work will not be accepted; there will be no make-up assignments.
3. Participate in learning activities. If you don't understand something, ask.
4. During class: students may not use cell phones or send text messages. Students may not use computers or tablets for any other purpose than to take notes or do work for this class. Students may not do work for other classes or read anything but course materials.

Learning Resources: No textbooks. Learning resources will be provided when available.

Useful links: Dress for Success: <http://agsci.oregonstate.edu/bioresource-research/careers/dress-success>

Assertion-Evidence Presentations checklist: http://www.writing.engr.psu.edu/AE_checklist.pdf

Description of Homework Assignments:

1. **Find 3 journal articles:** Find THREE recent (2015-present) Microbiology journal articles relevant to your group's topical problem. Only *primary* journal articles, with at least 5 figures or tables of data, may be used---no review articles or editor's comments. Submit a hard copy of the title, authors, journal name, volume, page numbers and abstract for each to Dr. Field. Choose your favorite of your three articles and bring FOUR hard copies of it to class to share with your team. Your team will select one article to read together in class.

2. **Find 3 dream jobs:** Find THREE advertised job positions (from three different places of employment) for which you would someday be qualified to apply, *after completing all anticipated education and training*. In writing, summarize the description of each job, cite the specific source for the job advertisement (e.g. web site, newspaper), explain why you are (*will be*) qualified, and attach a copy of the job description.

3. **Prepare a resume and cover letter:** Select one job to apply to from the jobs you identified in assignment #2: Prepare, in writing, a first draft of a resume, cover letter and a list of verifiable personal references, following the suggestions given in class. Must submit this assignment to Dr. Field as a hardcopy!

4. **Interview a professional:** Interview one professional with a career you are interested in pursuing. Ask specific questions about his or her career and write a one-page summary of the interview. Do not select Microbiology instructors/advisors for this assignment. Professors are OK *only if* your dream career is being a professor. If you are interested in teaching, try looking outside OSU: a community college, a private college, or a different university.

5. **Prepare a PowerPoint presentation (team assignment):** Prepare a 25-minute presentation of your team's topical problem, using at least 12 PowerPoint slides (but not more than 20 slides).

- Each student will be responsible for preparing and presenting at least three slides. One of the three slides must be a data/result slide.
- Please use the Assertion/Evidence format for your slides (see checklist: http://www.writing.engr.psu.edu/AE_checklist.pdf).
- Organize your presentation to introduce and explain the problem, define any terms your audience will need to understand, present the relevant scientific data your group chose to illustrate/understand the problem or answer the question(s), critique the data, and synthesize the information into a conclusion.
- Tell a good story that your audience will understand.
- Plan ahead, so that even though slides were originally prepared by different team members, the whole presentation sounds and appears smooth and well integrated.
- The team members should help each other edit the slides, so that there are no typos, spelling errors, poor graphics, excessive words, unreadable tables, and the like.
- Students **must dress professionally** for their presentations (think job interview).
- **Note variable due dates:** you must submit complete PowerPoint presentation (collated; include all team members' names) to Dr. Field on Canvas **24 hours before your team presents!**

6. **Questions for a presentation.** Each team will be assigned one other team's topic. Your team must come to their presentation with a minimum of four thoughtful, relevant questions to ask the other team. Each team member is responsible for one question.

7. **Ethics assignment:** Science Ethics Paper/Questions: "Sabotage".

University, College and Departmental Policies:

"Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations."

Academic Integrity: The following is a condensed version of the Student Conduct Code on Academic Dishonesty. For the entire text, see:

http://studentlife.oregonstate.edu/sites/studentlife.oregonstate.edu/files/student_conduct_code_1.pdf

Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another. It includes:

(A) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information.

(B) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.

(C) ASSISTING - helping another commit an act of academic dishonesty.

(D) TAMPERING - altering or interfering with evaluation instruments or documents.

(E) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

Student behavior:

People must treat each other with dignity and respect in order for scholarship to thrive. Expectations for Student Conduct:

http://studentlife.oregonstate.edu/sites/studentlife.oregonstate.edu/files/student_conduct_code_1.pdf

Working in teams demands specific skills and behaviors.

What makes a team successful?

- **Effective communication:** regular meetings, shared information, good listening, feeling free to ask questions, respect
- **Effective collaboration:** working cooperatively, valuing the contributions of all members, brainstorming, sharing the work equally, being responsible and accountable, establishing ways to share data (e.g. Google docs, Box)
- **Effective time management:** prioritizing, scheduling, planning ahead, preparing in advance, meeting commitments

Please note: Schedule may be subject to slight changes as needed.

<u>DATE</u>	<u>ASSIGNMENT DUE</u>	<u>IN CLASS</u>	<u>HAND OUT</u>
Week 0 Sept 20	Welcome!	Introduction to class. Class requirements. Meet and greet. Introductions in-class assignment. Divide into teams. Teams meet and choose project topic.	Syllabus and schedule In-class assignment Project topics
Week 1 Sept 27	Due: Assignment 1 (<i>Find 3 journal articles that pertain to your team's topical problem</i>)	Share papers with your team. Each team chooses one of the papers to read for the in-class assignment.	In-class assignment: read journal article
Week 2 Oct 4		Job search strategies, including the use of social media in the search. Resume and Cover Letter Preparation. Claire Wu, College of Science	
Week 3 Oct 11	Due: Assignment 2 (<i>Find 3 dream jobs</i>).	Job Interviews: The nuts and bolts. Mock interviews Claire Wu, College of Science	Team assignments for next week's in-class activity.
Week 4 Oct 18	Due: Assignment 3 (<i>Prepare a resume and cover letter</i>)	The misleading and deceptive use of data and statistics: calling bullshit.	In-class activity
Week 5 Oct 25	Due: Assignment 4 (<i>Interview a professional</i>)	Lecture: Scientific Research Work on research data analysis for Assignment #5.	
Week 6 Nov 1		Short Lecture: Assertion/Evidence slides. Work on presentation for Assignment #5.	
Week 7 Nov 8	Due: Assignment 5 (<i>Prepare a PowerPoint presentation</i>) (hand in presentation 24 hours before presentation date) Due: Assignment 6 (<i>Questions for a presentation</i>)	Teams present Assignment 5	
Week 8 Nov 15	Due: Assignment 5 (<i>Prepare a PowerPoint presentation</i>) (hand in presentation 24 hours before presentation date) Due: Assignment 6 (<i>Questions for a presentation</i>)	Teams present Assignment 5	Assignment 7
Week 10 Nov 29	Due: Assignment 7 (<i>Ethics assignment</i>)	Science Ethics and Professionalism. Join LinkedIn. In class activity/ assessment	

NO FINAL EXAM