

Course Description: Capstone experience for XXXX (DEPEND ON WHERE WE WANT TO FOCUS) students to synthesize XXX 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 XXXX and communicate this analysis in a presentation.

Learner Outcomes: Students will be able to:

1. Analyze a topical problem in XXXX.
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.

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

Description of Homework Assignments:

1. **Find 3 journal articles:** Find THREE recent (2015-present) 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 XXX. 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.

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. If you are interested in teaching, try looking outside CSU: 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).

Commented [B1]: Include case studies and capstone project development

Commented [B2]: This will be done in sophomore year when students are preparing for internships. Could update the versions from

- 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).

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.

Commented [B3]: Include diversity/inclusion/social justice aspect in capstone project.

Week 1	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 2	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 3		Job search strategies, including the use of social media in		

		the search. Resume and Cover Letter Preparation.		
Week 4	Due: Assignment 2 (<i>Find 3 dream jobs</i>).	Job Interviews: The nuts and bolts. Mock interviews	Team assignments for next week's in-class activity.	
Week 5	Due: Assignment 3 (<i>Prepare a resume and cover letter</i>)	The misleading and deceptive use of data and statistics	In-class activity	
Week 6	Due: Assignment 4 (<i>Interview a professional</i>)	Lecture: Scientific Research Work on research data analysis for Assignment #5.		
Week 7		Short Lecture: Assertion/Evidence slides. Work on presentation for Assignment #5.		
Week 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 9	Due: Assignment 5 (<i>Prepare a</i>	Teams present assignment 5	Assignment 7	

	<i>PowerPoint presentation</i> (hand in presentation 24 hours before presentation date) Due: Assignment 6 <i>(Questions for a presentation)</i>			
Week 10		Use of social media for job search		
Week 11	Due: Assignment 7 <i>(Ethics assignment)</i>	Science Ethics and Professionalism. Join LinkedIn. In class assessment		