
NATURAL SCIENCES SEMINAR

CAPSTONE FOR THE SCIENCES

COURSES: BIO 4899, CHM 4899, OR PHY 4899

Winter 2016

Winter Course Coordinator: Dr. Tenlen

Class Meets: Monday, 4:30 – 5:20 pm in Eaton 112

Biology Instructor:	Dr. Jenny Tenlen	
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Office & Office hours:	EH 113	posted and by appt.
Chemistry Instructor:	Dr. Ben McFarland	
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Physics Instructor:	Dr. John Lindberg	
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Mission Statement - Seattle Pacific University

"Seattle Pacific University seeks to be a premier Christian university fully committed to engaging the culture and changing the world by graduating people of competence and character, becoming people of wisdom and modeling grace-filled community."

SPU Goals for Capstone

1. To tie the liberal learning experience in the general education program together with the major-field discipline;
2. To engage students in a process of reflective self-assessment.

"Natural Sciences Seminar" - University Capstone Course Description

A capstone experience for seniors that explores current natural sciences topics in an interdisciplinary setting. Seminars addressing current research advances, ethical issues in science or the intersection of science, vocation and Christian faith are presented by faculty, students and guest scholars. Discussion and reflection incorporate appropriate readings. A minimum of two quarters of seminar must be completed during the senior year to fulfill the senior capstone requirement.

"Natural Sciences Seminar" - Course Goals

1. To expose students to current research topics in science from leaders in science both at SPU and from outside SPU.
2. To investigate some focal issues of debate within science as to the role of science in society, particularly in areas where one's eternal perspective affects the outcome of one's conclusions.
3. To begin a dialogue on what it means to be called to a scientific vocation.
4. To explore the impact of science (and its technological offspring) on society, with a special concern for ethical implications.

Requirements and Evaluation

1. Attendance (recorded by instructors) at speakers' presentations and submittal to the instructors of a written synopsis of the talk and one written question about each presentation will constitute 30% of the final grade. This assignment will be due at the end of the class period.
2. Participation in class discussions, including preparation before class, will comprise 20%. The preparation will consist of a one-page written reflection (300 words) on the assigned readings for the class period. All readings will be posted online in the course Blackboard website. You cannot attend without the reflection paper and will not receive credit for participation. There will be four reflection assignments due this quarter (10 pts each).
3. Students will prepare a major paper. This will constitute 50% of the final grade (see below).
4. Exit assessment exam (participation in this exam, if required, will be reflected in participation points for the class).
 - a. Students taking BIO 4899 for the **second** required capstone quarter will take the "Educational Testing Service major field test" www.ets.org. The ETS site states that "the tests are designed to assess the knowledge expected of students at the conclusion of a major in a specific subject area. The test is often given in a Capstone course or in the last semester of study as part of a graduation requirement to document proficiency in the specific area of study." The results of this test are never included in a student's record and are purely for assessment purposes for teaching and learning in the biological sciences at SPU. Contact Dr. Tenlen for a full description of the biology exam. The test will be administered on **Monday, March 14, from 3-5:30pm in Eaton 112.**
 - b. Students taking CHM 4899 for the **second** required capstone quarter will have ALREADY taken a similar exam through ACS in each of the different chemistry disciplinary classes. Thus, CHM 4899 students will NOT take a test during a set period during the final exam period

Reflection paper

As part of the overall capstone requirements you need to write a reflection paper focused on one of the topics covered during the class. This could be one of the lecture presentations or one of the reading/discussion sessions.

Please write a 5 – 7 page reflection paper (at least 1500 words) that is composed of two sections. The first is a research section that *extends your understanding* of the topic selected. You should list at least *two substantial references* in this section. The second section is a reflection on the area you have selected. Possible ideas for this section:

How has your personal journey (school, family, degree, etc.) affected your choice of subject? What new insights have you learned from the presentation and your study of it and how does this topic resonate with your education at SPU? How can you integrate your understandings of faith and science as you approach this topic?

The paper will be graded by the quality of the writing, quality of the reflection, and coherence.

Elements of a good reflection paper:

1. Sharp focus: This paper addresses the discipline specific thesis listed above and does so clearly and forcefully.
2. Rich content: The position taken in the reflection paper is from personal experience and is supported by discipline specific activities and examples. The personal nature of the reflection is critical to fully engage in the process of self- assessment.
3. Stylistic elegance: The title and opening paragraph are engaging; the transitions are artful rather than mechanical; the phrasing is tight and distinctive; the diction is fresh and concrete; the sentence structure is varied; and the tone enhances the purposes of the paper. Correct English grammar and spelling are observed.

* see grading rubric on Blackboard for more information.

Grading:

<u>Class Points</u>	<u>Percentage</u>	<u>Letter Grade</u>	<u>Numerical Grade</u>
186-200 pts	93-100%	A	4.0
180-185 pts	90-92%	A-	3.7
174-179 pts	87-89%	B+	3.3
166-173 pts	83-86%	B	3.0
160-165 pts	80-82%	B-	2.7
154-159 pts	77-79%	C+	2.3
146-153 pts	73-76%	C	2.0
140-145 pts	70-72%	C-	1.7
134-139 pts	67-69%	D+	1.3
120-133 pts	60-66%	D	1.0
0-119 pts	0-59%	E	0.0

Disabilities

All students have the right to learn, and we care very deeply that students feel supported and engaged in class. In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, I encourage students with specific disabilities that qualify for academic accommodations to contact Disabled Student Services (DSS) in the Center for Learning (<http://www.spu.edu/depts/cfl/dss/index.asp>). DSS in turn will send a Disability Verification Letter to the course instructor indicating what accommodations have been approved.

Emergencies

If an emergency requiring evacuation occurs during lecture, please exit the classroom in a calm and orderly fashion and meet as a group in Tiffany Loop. Please do not leave this area, as the instructor needs to account for all students immediately following the evacuation. If possible, pair up with your nearest neighbor in an emergency and keep track of each other until the situation has been resolved. In the unlikely event of a lockdown, please stay in the classroom and follow the instructor's directions. Additional information is provided on the next page.

Attendance if you are ill

If you miss a seminar, you can make it up by attending a local scientific seminar, either at SPU or at a local institute or university (links to several area seminar series are posted on Blackboard), and writing a 2-page (500-word) paper on the topic. If you miss a discussion, you can make it up by writing a 3-page (750-word) paper on the topic. **You may not make up more than 1 class session.**

Emergency Preparedness Information

Report an Emergency or Suspicious Activity

Call the Office of Safety and Security to report an emergency or suspicious activity by dialing 206-281-2911 or by pressing the call button on a campus emergency phone. SPU Security Officers are trained first responders and will be dispatched to your location. If needed, the SPU Dispatcher will contact local fire/police with the exact address of the location of the emergency.

SPU-Alert System

The SPU-Alert System is SPU's emergency notification system. It can send information via text message, email, electronic reader board, computer pop-ups (for SPU computers), loudspeaker, and recorded cell phone messages. Text messaging has generally proven to be the quickest way to receive an alert about a campus emergency. In order to receive text messages from SPU-Alert, you must provide SPU with your cell phone number through the Banner Information System on the web, <https://www.spu.edu/banweb/>. Select the Personal Menu then choose the Emergency Alert System tab. Contact the CIS Help Desk if you have questions about entering your personal contact information into the Banner Information System. Emergency announcements may also be made by SPU staff members serving as Building Emergency Coordinators ("BECs").

Lockdown / Shelter in Place – General Guidance

The University will lock down in response to threats of violence such as a bank robbery or armed intruder on campus. You can assume that all remaining classes and events will be temporarily suspended until the incident is over. Lockdown notifications are sent using the SPU-Alert System.

If you are in a building at the time of a lockdown:

- Stay inside and await instruction, unless you are in immediate visible danger.
- Move to a securable area (such as an office or classroom) and lock the doors.
- Close the window coverings then move away from the windows and get low on the floor.
- Remain in your secure area until further direction or the all clear is given (this notification will be sent via the SPU-Alert System).

If you are outside at the time of a lockdown:

- Leave the area and seek safe shelter off campus. Remaining in the area of the threat may expose you to danger.
- Return to campus after the all clear is given (this notification will be sent via the SPU-Alert System).

Evacuation – General Guidance

Students should evacuate a building if the fire alarm sounds or if a faculty member, a staff member, or the SPU-Alert System instructs building occupants to evacuate. In the event of an evacuation, gather your personal belongings quickly and proceed to the nearest exit. Most classrooms contain a wall plaque or poster on or next to the classroom door showing the evacuation route and the assembly site for the building. Do not use the elevator.

Once you have evacuated the building, proceed to the nearest evacuation assembly location. The "Stop. Think. Act." booklet posted in each classroom contains a list of assembly sites for each building. Check in with your instructor or a BEC (they will be easily recognizable by their bright orange vests). During emergencies, give each BEC your full cooperation whenever they issue directions.

Additional Information

Additional information about emergency preparedness can be found on the SPU web page at <http://www.spu.edu/info/emergency/index.asp> or by calling the Office of Safety and Security at 206-281-2922.

Natural Sciences Capstone Schedule, Winter 2016

Date	Speaker/Topic
Jan. 11	Course Introduction and Presentation/Discussion (Dr. Tenlen)
Jan. 18	MARTIN LUTHER KING JR DAY - NO CLASS
Jan. 25	Presentation: Dr. Ben Wiggins Faculty Coordinator for Biology Instruction, University of Washington <ul style="list-style-type: none">• Due: reflection on paper chosen by Dr. Wiggins
Feb. 1	Workshop: the "Elevator Pitch" and interviewing skills <ul style="list-style-type: none">• Due: "elevator pitch" assignment
Feb. 8	Dr. Cara Wall-Scheffler <ul style="list-style-type: none">• Due: reflection on paper chosen by Dr. Wall-Scheffler
Feb. 15	PRESIDENT'S DAY - NO CLASS
Feb. 22	Presentation: Ruth Park Project Biologist, Confluence Environmental Company
Feb. 29	Discussion: topic TBA
March 7	Presentation: Dr. Jarrod Johnson Postdoctoral Research Fellow, Center for Infectious Disease Research <ul style="list-style-type: none">• Due: reflection on paper chosen by Dr. Johnson
March 14	Biology Students taking BIO 4899 for second time: ETS Major Field Exam (Please bring laptop or tablet to complete Biology Dept. Exit Survey) 3:00 pm - 5:30 pm, Eaton 112
Thurs., March 17	FINAL PAPER DUE. Submit via link on Blackboard no later than 5:00 PM on March 17, 2016.