

**Biology 490: Science and Society**

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Office Hours: Tue/Wed 9:00 – 11:00 or by appointment

Meeting time and location: Thur/Fri 9:00 – 9:50 in TNR 461

**Course Description:** This senior seminar focuses on the historical and contemporary relationships between science and society, with an emphasis on biology and related fields. Meetings will primarily consist of in-class discussions of reading/writing assignments and some videos related to course content. Many discussions will be student-led. As a *Communication in the Major* course, emphasis will be placed on both written and oral communication as they pertain to the scientific field of biology.

**Course Learning Outcomes:** After taking this course, students will be able to:

- 1) Critically analyze and discuss a number of historical and contemporary scientific controversies in the context of public opinion and policy.
- 2) Find, read, interpret, and use scientific literature to explore course-relevant topics of interest via both written and oral communication.
- 3) Critically evaluate and provide meaningful feedback on the written work and oral presentations of others.

**Reading material and videos:** All reading material and videos will be made available to you on D2L.

**Attendance and participation:** This is an advanced course on a complex topic and we are a small group. The course relies heavily on interactions among participants; therefore, on-time attendance is required. Each meeting is worth up to 5 points for attendance (see grading, below). If you are late to class, you will lose 1 of these points for each 3-minute block of time. The course includes quite a bit of reading and some videos and we will use this material to guide our discussions. I expect that you read all course documents and watch all videos before coming to class and that you are prepared to engage in thoughtful, informed, and dynamic discussions about this material. Your final course grade will be influenced by your participation in these discussions (see grading, below). If you are consistently quiet, unengaged, and/or unprepared for discussion you will not fare well in this regard.

**Questions/opinions about reading and video assignments:** The majority of our meetings include one or more associated reading and/or video assignments. To encourage you to engage with this material before coming to class, I ask that you come up with at least one question or opinion about each assignment after you read/watch it. Record these in a single electronic document (e.g., .docx, .pdf, etc.), save the file using your name as the filename, and submit it to the dropbox folder associated with that particular meeting by 8:30 AM that morning. The questions/opinions associated with each assignment are worth up to 2 points each.

For example, on 9/8 we will be discussing two different reading assignments. Within dropbox you will find a folder called “9/8”. Within that folder you should submit a single document that contains at least one question or opinion for each of those reading assignments. Since there are two distinct assignments for 9/8 the document will be worth up to four points.

Note that there are a total of 80 points available for this particular course requirement; however, there will probably be more than 80 points-worth of reading/video assignments (exact number will depend on

how many different assignments are chosen by your peers when it's their turn to lead discussion). Therefore, although I expect you to read/watch all material, if you skip an assignment or two it's unlikely to affect your final course grade.

**Written work:** There are two distinct writing assignments in this class. One is the production/revision of your curriculum vitae/resume and a cover letter/personal statement to go along with it. These materials will be tailored specifically to a real job/position that you locate (I will help you if needed). Whether you actually apply for the job/position is up to you.

The other writing assignment will represent the most substantial investment of your time and energy in this course, namely the production of an ~8-page research/review paper focused on a topic of your choice (related to course content, of course). You should start thinking about potential topics for this paper right away. I will ask that you meet with me for a few minutes to discuss your idea(s) before 10/13, though you are welcome and encouraged to do so earlier. A complete rough draft (two hard copies) of your paper will be due no later than 11/10. The rough draft will be evaluated and critiqued by me as well as one of your classmates. The final draft of your paper will be due (electronically via dropbox) no later than the last day of classes (Dec 15<sup>th</sup>).

**Presentation:** You will also share your research/review topic with the class in the form of an oral presentation near the end of the semester. Presentations will be 10-12 minutes long with a few additional minutes for questions from the audience. I ask that you use visual aids (e.g., powerpoint slides) during your presentation.

**Peer evaluation:** Each student in this course will also be asked to evaluate and provide constructive feedback on the written work of a peer. To that end, each student will receive a rough draft of a research/review paper written by a classmate. Students will then be asked to critically evaluate the paper and answer a number of associated questions. Authors will receive peer-evaluations (and evaluations from me) in time for them to be useful as they work on their final draft.

**Student-led discussions:** Each of you will be asked to take responsibility for one of our meetings this semester. This means you will need to choose an interesting topic and relevant media to provide background information for the class and inspiration for discussion. You will then lead the class through a discussion of your chosen topic. I advise that you start thinking of potential topics now. I ask that you talk with me before settling on a topic and choosing reading/video materials (I will want to approve the materials before they are shared with the class). A sign-up sheet will be available.

**Biology comprehensive exam:** Satisfactory completion of this course requires the completion of the Biology Department's comprehensive exam. Scores are used to compare class averages among various populations of biology majors to assess general student learning as an outcome of completing our department's biology curriculum. Scores will not be made available to you or your instructor and will have no bearing on grades in this or any other class. However, your 490 grade will be withheld until the exam is taken. The exam will be offered in TNR 120 from 6-7 PM on Wed Dec 6<sup>th</sup> and Thur Dec 7<sup>th</sup>. You do not need to sign up ahead of time; just show up on one of those two evenings.

**Grading:** The total number of points possible in this course is 450. Point values (and due dates, if relevant) are listed below. Values with an asterisk (\*) refer to assignments that, if not completed, will result in the associated loss of points and a reduction of your letter grade to the next lowest full grade (i.e., B+ to a C+).

| Activity                                   | # Points possible | Due Date for associated assignment   |
|--|-------------------|--------------------------------------|
| Questions/opinions (2 pts. per assignment) | 80                | 8:30 AM on day of associated meeting |
| CV/res. & cover letter/pers. statement     | 30*               | 10/20                                |
| Research topic meeting                     | 10*               | 10/13                                |
| Research/review paper rough draft          | 30*               | 11/10                                |
| Peer evaluation                            | 30*               | 11/30                                |
| Research/review paper final draft          | 30*               | 12/15                                |
| Research/review paper presentation         | 40*               |                                      |
| Leading class discussion                   | 20*               |                                      |
| Attendance (5 points per meeting)          | 140               |                                      |
| Participation                              | 40                |                                      |

Your final grade in this course will be based on the percentage of all possible points that you earn throughout the semester. To determine your final grade the following metric will be used:

|       |        |        |        |        |        |        |        |        |        |       |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| ≥ 94% | 90-93% | 87-89% | 84-86% | 80-83% | 77-79% | 74-76% | 70-73% | 67-69% | 60-66% | ≤ 59% |
| A     | A-     | B+     | B      | B-     | C+     | C      | C-     | D+     | D      | F     |

**Late policy:** Because there is so much collaboration in this class, assignments must be turned in on time. Assignments lose 20% of their value for each day they are late.

**Students with disabilities:** I will be happy to help you if you need special accommodations to succeed in this course. Please visit the UWSP Student Disability and Assistive Technology Center (located in LRC 609) to document your needs and then contact me so that appropriate arrangements can be made. More information can be found here: <http://www.uwsp.edu/disability/Pages/default.aspx>

**Academic integrity:** It is your responsibility to be aware of your rights and responsibilities as a UWSP student. Please take the time to read and understand the information found here (and let me know of any questions): <http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>

**Plagiarism:** It is your responsibility to be aware of the definition(s) of the word plagiarism, and take care to avoid committing plagiarism in your written work. Your written work must reflect your own thoughts and ideas expressed in your own words. In addition, you must always cite your sources of information and provide a bibliography for any written work you produce. Please take the time to read and understand the information found here (and let me know of any questions): <http://library.uwsp.edu/guides/vrd/plagiarism.htm>

**Meeting schedule:** Note that I reserve the right to change this schedule or add/remove/change content, with due notice, as we progress through the semester.

| <b>Date</b> | <b>Topic</b>  | <b>Assignment(s) and/or items due</b>   |
|-------------|---|---|
| 9/7         | Course introduction   |   |
| 9/8         | Why do people doubt science?<br>Public/scientists' views on science and society   | Read Achenbach 2015, and (skim) Funk and Rainie 2015a   |
| 9/14        | Evolutionary theory I   | Read Carroll 2009a and 2009b  |
| 9/15        | Evolutionary theory II  | Read Quammen 2004 and (skim) Dawkins/Wright video   |
| 9/21        | Climate change  | Read Kahan et al. 2012, watch Puttnam video, and (skim) Cook et al. 2013  |
| 9/22        | CVs/resumes & cover letters/personal statements<br>Format of research/review paper<br>Finding and using relevant literature | Read Hofmann 2013<br><b>CV/resume &amp; cover letter/personal statement assigned</b><br><b>Research/review paper assigned</b> |
| 9/28        | Population control  | Read Malthus (excerpt) 1798, Hernandez and Qin 2015, and Bradshaw and Brook 2014  |
| 9/29        | Food  | Read Freedman 2013 and Jones 2015 and (skim) BBC video  |
| 10/5        | Medical testing/research on animals   | Read Simkin et al. 2017 and (skim) Funk and Rainie 2015b  |
| 10/6        | Vaccines  | Read Haberman 2015 and Taylor et al. 2014   |
| 10/12       | Medical marijuana   | Read Carroll 2015 and Whiting et al. 2015 and watch Cannabis video  |
| 10/13       | Race  | Read Bamshad and Olson 2003<br><b>Meet with Barringer to discuss your research/review paper topic no later than today</b>     |
| 10/19       | Human sexuality I   | Read Driscoll 2008 and Waal 2006  |
| 10/20       | Human sexuality II  | Read Rikowski and Grammer 1999 and Wilson and Daly 2004<br><b>CV/resume &amp; cover letter/personal statement due</b>         |
| 10/26       | Student led discussion  | TBD...  |
| 10/27       | Student led discussion  | TBD...  |
| 11/2        | Student led discussion  | TBD...  |
| 11/3        | Student led discussion  | TBD...  |
| 11/9        | Student led discussion  | TBD...  |
| 11/10       | Student led discussion  | TBD...<br><b>Research/review paper rough draft due</b>  |
| 11/16       | Student led discussion  | TBD...<br><b>Peer evaluation assigned</b>   |
| 11/17       | Student led discussion  | TBD...  |
| 11/30       | Student led discussion  | TBD...<br><b>Peer evaluation due</b>  |
| 12/1        | Student led discussion  | TBD...  |
| 12/7        | Student presentations   |   |
| 12/8        | Student presentations   |   |
| 12/14       | Student presentations   |   |
| 12/15       | Student presentations (if needed)   | <b>Final draft research/review paper due</b>  |