

Research and Technical Writing in Biology

BIOL 4010

CSU Stanislaus - Fall 2013

I. General Information

Time: Tues. 9:30-11:15 am (lecture); Thurs. 9:30 am-12:20 pm (laboratory)

Location: N210

Instructor: Dr. Matthew Cover

Office Hours: Thursday 4:00-5:00 pm, Friday 9:00-10:00 am (N273), or by appointment. (If you know you would like to meet, it is best to confirm a time via email.)

Email: mcover@csustan.edu

Email is the best way to reach me. I am trying to only check and respond to email during the work day (8:00 am-5:00 pm). I usually respond to email within 24-48 hours. If your question is complex, I may take longer to respond or ask you to come to office hours. Please write "BIOL 4010" in the subject line, and include your full name in the email- otherwise your email may get mis-filed and I will not respond.

Personal Website: <http://www.matthewrcover.com>

Course Website: Blackboard (<http://www.csustan.edu/blackboard>)

Communication: Please check your csustan email on a regular basis, ideally every day. You can easily set up your csustan email address to forward to another email address you check more frequently.

II. Course Description and Format

From the course catalog: (3 Units) Introduction to bibliographic research, design/interpretation of experiments, statistical testing of results, and preparation of technical reports in biology. Satisfies upper-division writing proficiency requirement. Prerequisites: Completion of the Writing Proficiency Screening Test with a passing score; BIOL 1050; BIOL 1150; ENGL 1001, ENGL 1002, or ENGL 1005; and junior standing or consent of instructor (written communication). (Lecture, 2 hours; laboratory, 3 hours) (Fall)

This course satisfies the WP requirement. It is designed for upper division biology majors, although students from other science majors or related majors (e.g., geography) should also be able to succeed provided they have passed the prerequisites.

In this course we will approach questions such as:

- How are scientific publications organized?
- How do you effectively and efficiently read scientific publications?
- What makes scientific information reliable?
- How do you find scientific information?
- What aspects of style and composition are unique to science writing?
- How can we write (proposals, applications, resumes, scientific findings, etc.) in a way that convinces readers of the validity of our ideas and the strength of our abilities?
- How can we effectively be our own best editor?

- What forms of criticism are most helpful for improving writing?
- How are scientific ideas conveyed to fellow scientists and to the general public?

Class Format

In general we will stick with the pattern of the Tuesday class (9:30-11:15) being a lecture and discussion period, during which we will cover the principles of scientific writing and communication. We will purposefully not use laptops during the Tuesday lecture period; instead, we will write on paper and read from printed copies of documents. On Thursday class sessions we will do activities, including writing, peer review, bibliographic research, and online activities, that will involve the use of computers.

Why take this course?

Writing is one of the most essential tools that you will develop in college and use throughout your life. It is the most important and trusted way that information is shared, especially in science fields. Without effective scientific writing, even the best scientific research is doomed to fail. Additionally, the quality of your writing (style and composition) is often the most important factor that is used by others to judge the quality of your work and your abilities as a scientist and professional.

Just as important, the process of writing is deeply interconnected to the process of thinking. Writing, at its best, is a process to gain increased understanding of the world and our ideas. The act of communicating complex, rational arguments is an essential step in fully developing those arguments. Without effective writing, “big” ideas and arguments lack meaning and can’t be critically examined.

III. Required Texts and Materials

There is one required text book:

- Angelika H. Hofmann: Writing in the Biological Sciences. Oxford University Press, 2013. ISBN: 978-0-19-976528-7.

In addition, I will distribute hard copies or electronic copies (via blackboard) or many other readings.

You will need to use a laptop for portions of this class. You can either bring your own laptop or use one of the computers in our class room. Your laptop needs to have a word processing program and access to the campus wireless internet. Please make sure your laptop is set up to connect to the university wireless network prior to the first time we use computers. You should plan on using computers every Thursday class session, unless I tell you otherwise.

IV. Course Goals

Students will learn to:

1. Critically analyze and understand written scientific communication.
2. Identify aspects of writing style, composition, and data presentations that effectively communicate ideas and information.
3. Use bibliographic databases to find published sources of scientific information.

4. Synthesize scientific information from multiple sources and develop novel research questions.
5. Prepare a research proposal in the style of the NSF Graduate Research Fellowship Program.
6. Effectively communicate scientific information in a variety of formats including technical scientific writing, science journalism, creative nonfiction, and professional documents.

V. Expectations

- You are expected to treat everyone in our class with respect and kindness. In order to create a thriving learning community it is important that we encourage one another to do our best and not put anyone down. In order to avoid distracting yourself and others, please do not text, email, surf the web, or do work from other classes when we are working on in-class activities. If you have other responsibilities that can't wait until class is over please discretely step outside the classroom.
- Come to class properly prepared by doing the **assigned readings** prior to class.
- Engage the material **deeply** and **critically**. Treat your education as if it is helping prepare you to change the world (which hopefully it is!).
- Attend every class session, be on time, and participate fully. Take good notes!
- Complete and turn in assignments on time.
- Maintain the highest standards of **academic integrity**. This means: All work that you submit must be your own. I am very good at detecting plagiarism. **Plagiarism** (taking direct quotes or ideas from other sources without attributing them) on any assignment or copying from another student on an exam results in an automatic F in the course. Don't take the risk! If you have questions about what is acceptable, please ask me.
- All **electronic devices** (phones, tablets, mp3 players, etc.) must be **turned off** (or silent) and kept in your bag during class (except when we are using laptops for class activities). If I see you using laptops for other purposes, I will ask you to leave. Please disable your wireless internet to avoid the temptation of checking email, facebook, or surfing. If you need to make an emergency phone call or text, please step out of the room.
- Take the initiative to use course and campus resources (office hours, web sites, readings, tutoring, etc.) to get the most out of the course.

You can expect that the instructor will:

- Do his best to provide you with a stimulating, useful, and fun course!
- Treat you with respect.
- Assign grades impartially based on rubrics and standards.
- Be available to help during office hours and via email.
- Return assignments and exams and post grades in a timely fashion (<2 weeks).

VI. Grades

Grading

Participation and in-class activities (5 pts per class)	150
Major Assignments	
Article Summary (Draft/Final)	10/50
Annotated Bibliography (Draft/Final)	10/50
Research Proposal	10/100
CV and cover letter	10/50
Science journalism / creative nonfiction	10/50

Total **500 pts**

- Grades will be assigned based on standard percentage cutoffs (93-100 = A, 90-93 = A-, 87-90 = B+, etc.). It is unlikely that I will apply a curve applied to the final grades, and there are few (or no) extra credit points that will be offered.
- Late assignments will not be accepted when “Draft” versions of assignments are due- if it is late you will receive a score of 0. Late assignments will be accepted for all other assignments, except that 10% of the possible points will be subtracted from the score for each day that it is late.

Participation

You should fully engage with the in-class activities during the course. Many of our activities, especially peer review and group projects, can only succeed if each and every student contributes fully. You will be judged and graded based on how fully you are committed to the class and to staying on-task for in-class assignments. Points will be deducted for showing up late, leaving early, not contributing, and distracting others.

VII. Schedule

**This schedule is subject to change. Changes to the schedule will be announced in class and revised versions of the syllabus will be posted on blackboard.

Readings refers to the numbered chapter in Hoffman.

Week	Date	Topic/Activity	Assignments	Readings- complete by this date
1	R 8/22	Overview and syllabus		
2	T 8/27	What is scientific communication?		1
2	R 8/29	Reading journal articles		
3	T 9/3	Organization of journal articles		6
3	R 9/5	Finding journal articles		2

4	T 9/10	Summarizing journal articles		9
4	R 9/12	No class: Dr. Cover at conference		
5	T 9/17	Peer review article summary	Draft Article Summary Due	7
5	R 9/19	Finding journal articles	Final Article Summary Due	
6	T 9/24	Tables and figures		5
6	R 9/26	Tables and figures		
7	T 10/1	Developing research questions		10
7	R 10/3	Peer review annotated bibliographies	Draft Annotated Bibliography Due	
8	T 10/8	No Class: Non-Instructional Day		
8	R 10/10	Synthesizing information	Final Annotated Bibliography Due	3
9	T 10/15	Developing research questions		14
9	R 10/17	Developing research questions		
10	T 10/22	Proposals and Grants		4
10	R 10/24	Proposals and Grants		
11	T 10/29	No Class: Optional All Day Field Trip: California Aquatic Bioassessment Workgroup (CABW) @ UC Davis		
11	R 10/31	Peer review draft proposals	Draft Research Proposal Due	
12	T 11/5	CVs and resumes		15
12	R 11/7	Cvs and resumes	Final Research Proposal Due	
	11/8	NSF Graduate Research Fellowship Due		
13	T 11/12	Cover letters and email		
13	R 11/14	Peer review CV and cover letter	Draft CV and cover letter due	
14	T 11/19	Science journalism		
14	R 11/21	Science journalism	Final CV and cover letter due	
15	T 11/26	Creative nonfiction		
15	R 11/28	No class: Thanksgiving		
16	T 12/3	Creative nonfiction		
16	R 12/5	Peer review journalism/creative nonfiction assignment	Draft journalism/creative nonfiction assignment due	
17	T 12/10	Wrap Up		
	F 12/13	(No Final Exam)	Journalism/creative nonfiction assignment due by noon.	