

BIOL 5010—Scientific Writing and Communication

GENERAL INFORMATION

Instructors:	Dr. Patrick Kelly	Dr. Matthew Cover
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Office Hours:	F 8-10 (or by appt.)	T 11-12, R 2:30-3:30
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Outside of office hours, email is usually the best way to reach us, and we usually respond within 24 hours (except on weekends). Please type “BIOL 5010” at the start of the subject line, and include both of us on the email if it is a general question.

BIOL 5010—Scientific Writing and Communication (4 units)—Provides coverage of scientific writing principles; the literature at all levels; writing, reviewing, and presenting a proposal; working in teams. Prerequisites: BS/BA in Biological Sciences (or equivalent); completion of BIOL 4010 (or any upper-division writing course) with a passing score, or equivalent experience in analysis and writing; consent of instructor. (lecture/activity, 2/4 hours)

Meeting Days/Times/Locations

Tuesdays, 2:30-4:20pm in the BioDome

Fridays, 12:30-4:20pm in N201 Computer Lab (or TBD; depending on our class activities, the available hardware and software resources in N201 may be a significant advantage.)

PURPOSE: *Scientific Writing and Communication* prepares students for the analytical, writing, and communication challenges of pursuing an MS in Biology and for their careers beyond graduate school.

LEARNING OBJECTIVES: Students who complete this course should:

- 1) Know, understand, and be comfortable using the basic principles of scientific writing (style and composition) that are the norm in scientific communications;
- 2) Evaluate scientific information at all levels from peer-reviewed publications to news sources and social media; this includes consideration of ethics (plagiarism, etc.);
- 3) Produce a draft research proposal that is of high enough quality to be submitted for funding in support of graduate research;
- 4) Gain a better understanding of the peer-review process through practice;
- 5) Enhance conference presentation skills, both poster and oral, through practice; including the effective use of tables/figures to visualize data;
- 6) Work effectively in a team setting.

TEXTS AND RESOURCE MATERIALS: There is no single textbook suited to this course. However, Angelika H. Hofmann’s *Scientific Writing and Communication: Papers, Proposals, and Presentations*¹ is a very good reference text. Other good texts are Jan Pechenik’s *A Short Guide to Writing About Biology* (now in its 9th edition, 2016, Pearson, New York, NY), and Joshua Schimel’s *Writing Science* (2012, Oxford Press, New York, NY). Other useful reference texts will be made available.

¹ 3rd edition (2017), Oxford University Press; a 4th edition is in the works.

OVERVIEW: Over the 16-week semester, students will work with each other, and under the supervision of the instructors, to develop their scientific writing and communication skills. The course will be divided into three parts:

- Part 1 (4 weeks) will focus on the basics of scientific writing including bibliographic research, writing principles, ethics, and using visuals (tables, figures, etc.).
- Part 2 (6 weeks) will focus on drafting an MS thesis research proposal, an effort that will involve a considerable amount of peer-review as well as interaction with instructors.
- Part 3 (6 weeks) will focus on presentations and communication, including A) creating an attractive and professional poster for a conference; B) following refinement of the draft MS proposal, each student will give an oral presentation at the end of the course on his/her proposal; C) social media in scientific communication; and D) creating a professional web site.

ASSIGNMENTS, ASSESSMENT, AND GRADING:

Exam on principles of scientific writing (part 1 of course)	20%
Thesis research proposal (including component steps)	50%
Oral presentation of proposal	10%
Poster presentation	10%
Web page, social media, and other assignments	10%

DRAFT SCHEDULE

Note: this is tentative, and will change depending upon the backgrounds, goals, and needs of the participants

F 8/23 No meeting; complete and submit by email answers to the introductory survey

Week 1

T 8/27 Introductions, goals for the class (PK, MC)

F 8/30 Tools for bibliographic searches; reading, note-taking, and outlining journal articles, avoiding plagiarism (PK, MC)
Homework for 9/6: outlines of 10 articles

Week 2

T 9/3 Words, word location (Hoffman, Chps 2, 3) (PK)

F 9/6 Bibliographic searches- citation tracing; concept maps and themes (MC)
Homework for 9/13: outlines of 20 articles, concept map

Week 3

T 9/10 Sentences, grammar problems (Hoffman, Chps 4, 5) (PK)

F 9/13 Article summaries, lit review outline (MC)
Homework for 9/20: lit review outline, 2 paragraphs

Week 4

T 9/17 Paragraphs (Hoffman, Chp 6; Schimel, Chp 11) (PK, MC)

F 9/20 Peer review of paragraphs; figures and tables (PK, MC)
Homework for 9/27: 3 pages of lit review

Week 5

T 9/24 Exam on part 1 (on Blackboard)

F 9/27 Peer/instructor review of lit review; writing time (PK, MC)
Homework for 10/4: draft of full lit review

Week 6

T 10/1 Questions, Objectives, and Hypotheses (PK, MC)
F 10/4 Lit review peer/instructor review and feedback (PK, MC)
Homework for 10/11: questions/objectives/hypotheses

Week 7

T 10/8 NO CLASS- Non-instructional Day
F 10/11 Peer review/discussion of questions/objectives/hypotheses (PK)

Week 8

T 10/15 Methods (PK, MC)
F 10/18 Work on methods section (PK, MC)
Homework for 10/22: draft of methods section

Week 9

T 10/22 Peer/instructor review of methods section (PK, MC)
F 10/25 Work on edits, complete proposal draft (PK, MC)
Homework for 11/1: complete draft of proposal

Week 10

T 10/29 Social media intro (PK, MC)
F 11/1 Peer/instructor review of complete drafts (PK, MC)

Week 11

T 11/5 Oral presentations (background, effective slides) (PK)
F 11/8 Work on slides, peer review and feedback on slides (PK)

Week 12

T 11/12 Poster presentations (background, how to) (PK, MC)
F 11/15 Social media check-in; work on posters, peer and instructor feedback (MC)

Week 13

T 11/19 Peer review of second revision of thesis proposal (PK, MC)
F 11/22 Web sites (MC)

Week 14

T 11/26 Poster presentations- first draft (projected): peer review, instructor feedback
THANKSGIVING BREAK

Week 15

T 12/3 Poster presentations (PK, MC)
F 12/6 (work day- no class?)

Week 16

T 12/10 Student thesis proposal oral presentations; peer review, feedback (PK, MC)

FINALS WEEK: 12/12-12/18