

AGRO/HORT 403/803: Scientific Writing and Communication (Capstone)
Spring Semester 2015 University of Nebraska

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Office hours: Drop in or by appointment

Required materials:

Textbook: Scientific Writing and Communication, Second Edition, by Angelika H. Hofmann. Oxford University Press, ISBN 978-0-19-994756-0
Access to a computer and internet, Word and PowerPoint (or equivalents), access to printer

Course Prerequisites: Senior standing or higher, science major, an ACE1 written communication course, an ACE2 oral communication course, and permission of instructor. Because students will need data for analysis and interpretation, all students must have their own original dataset, or have obtained a dataset from an advisor or other source before permission will be granted.

Course Overview: This course combines science disciplines with English and communications. Students will begin with original data/information and use the scientific theory from previous courses to interpret this data/information to generate knowledge. Through the scientific writing process, students will learn how to communicate the knowledge in a scientific context so that it becomes understanding. This requires both visual presentation in figures and tables as well as explanations through writing and/or oral presentation. This course will focus on developing literature review, writing, and presentation skills to allow students to present understanding to a broad audience. Two primary activities will require synthesis and integration: a) a final research manuscript that contains references and comparison to scientific literature and has gone through revisions and student peer review, and b) a poster presentation of student research.

403/803 Distinction: Students enrolled in 803 will have additional assignments of a) writing a cover letter for submission of their research paper to a peer-reviewed journal, and b) writing a cover letter for a job application.

ACE required material: This course will satisfy ACE Learning Outcome 10: "Generate a creative or scholarly product that requires broad knowledge, appropriate technical proficiency, information collection, synthesis, interpretation, presentation, and reflection." Students have opportunities to acquire the knowledge and skills necessary to achieve the learning outcome by performing literature searches, critiquing published papers, writing and revising drafts of the final research paper, peer reviewing, and preparing and presenting a research poster.

Assignments used to assess achievement of Learning Outcome 10 will include the final research paper and the poster presentation.

Attendance policy: Attendance is required.

Assessment:

10% Research paper critiques - a standard format will be provided for students to critique four example papers

5% Initial outline and reverse outline, citation list assignments

10% Drafts of research paper - drafts will include each section of the IMRaD (Introduction, Methods, Results and Discussion) format paper plus the abstract and title, and a draft of the complete manuscript

40% Final research paper - complete paper, revised based on peer review

10% Peer reviewing - a standard format will be provided for students to constructively critique their peers' writing

15% Project poster - the same research as the written paper will be presented in an alternative format that is widely used at scientific conferences

10% Oral poster presentation - the revised poster will be presented to the class

Grading scale: A: 90-100%, B: 80-89%, C: 70-79%, D: 60-69%, F: <60%

Learning Objectives:

1. Identify and recommend appropriate sources of scientific research information (e.g. journals)
2. Appraise and critique the methodology, results, and interpretations in scientific writing
3. Be able to clearly and simply state research hypotheses and specific objectives, and write results and discussion that address the hypotheses and objectives
4. Assemble results of experiments, compose figures and/or tables, organize manuscript in standard scientific format, provide interpretations in the context of existing knowledge
5. Prepare a research poster and deliver a poster presentation for a general audience

Catalog description: A course in reading and critiquing, writing, and presenting scientific information. Students use research data to compose a manuscript in standard scientific format, and prepare and present a poster to a general audience. Ethical issues in research and writing will be addressed.

Due dates: see schedule and course Blackboard page

Late assignment policy: for this type of class, it is crucial that all assignments are completed on time. Thus, late assignments will be docked 20% per day.

Academic honesty policy:

Academic honesty is essential to the existence and integrity of an academic institution. Any instances of academic dishonesty will be handled as described in the UNL Student Code of Conduct (<http://stuafs.unl.edu/ja/code/>).

ADA statement: Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

Course outline:

- I. Scientific writing style and composition (3 weeks)
 - a. Reading papers
 - b. Critiquing papers
- II. Ethics in research and writing (1 week)
 - a. Avoiding plagiarism
 - b. Ethics in citations
 - c. Literature search and referencing
- III. First draft of research paper (8 weeks)
 - a. Introduction
 - b. Materials and methods
 - c. Results
 - d. Discussion
 - e. Abstract and Title
- IV. Final draft of research paper (2 weeks)
- V. Making a research poster (1 week)
- VI. Presenting the posters (During final exam)

Peer Review of Teaching Project: This semester, I am participating in the Peer Review Project, a University-wide, on-going program to develop methods for promoting and documenting student learning. This is a year-long process in which participants in the project (professors) put a great deal of thought into the design of a single course. One of the project's goals is to improve student learning, and we cannot accomplish this goal without student input.

For the project, I will need to select several students whose work would be included anonymously in my course portfolio as an archive of student performance. These examples are important to show how much and how deeply students are learning. The completed course portfolio will be put on a project website: www.courseportfolio.org so that it can be shared, used, and reviewed by other faculty.