

Term Information

Effective Term Spring 2020

General Information

Course Bulletin Listing/Subject Area Chemistry
Fiscal Unit/Academic Org Chemistry - D0628
College/Academic Group Arts and Sciences
Level/Career Graduate
Course Number/Catalog 6790
Course Title Scientific Writing
Transcript Abbreviation ScientificWriting
Course Description A successful researcher is someone who knows both how to do their science, and also how to effectively communicate their findings through the written and spoken word. The purpose of this course is to introduce students to the processes involved in professional or scholarly publication.
Semester Credit Hours/Units Fixed: 2

Offering Information

Length Of Course 14 Week
Flexibly Scheduled Course Never
Does any section of this course have a distance education component? No
Grading Basis Letter Grade
Repeatable No
Course Components Lecture
Grade Roster Component Lecture
Credit Available by Exam No
Admission Condition Course No
Off Campus Never
Campus of Offering Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites Instructor permission required
Exclusions Not open to students with credit for Chemistry 6790
Electronically Enforced Yes

Cross-Listings

Cross-Listings Microbiology 6790

Subject/CIP Code

Subject/CIP Code 40.0501
Subsidy Level Doctoral Course
Intended Rank Masters, Doctoral

Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

- Identify, discuss, and analyze various rhetorical strategies and elements of the writing process as applicable to academic writing
- Critically read published work in their specializations and compose thoughtful, constructive commentary on those works
- Identify and analyze publication venues in their specializations and articulate different requirements of those venues
- Identify and implement appropriate writing strategies for composing works for different publication venues

Content Topic List

- Scientific Publication
- Writing a Research Paper
- Parts of a Research Paper
- Scientific Conferences
- Writing for a Lay Audience
- Research Proposals
- Presentations

Sought Concurrence

No

Attachments

- Chem 6790_syllabus_Spring 2020.docx: syllabus
(Syllabus. Owner: Burke,Kelly Michelle)
- CHEM_6790_Cover_letter.docx: cover letter
(Cover Letter. Owner: Burke,Kelly Michelle)

Comments

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Burke,Kelly Michelle	07/10/2019 01:07 PM	Submitted for Approval
Approved	Magliery,Thomas John	09/03/2019 09:16 AM	Unit Approval
Approved	Haddad,Deborah Moore	09/03/2019 09:33 AM	College Approval
Pending Approval	Vankeerbergen,Bernadette Chantal Oldroyd,Shelby Quinn Hanlin,Deborah Kay Jenkins,Mary Ellen Bigler	09/03/2019 09:33 AM	ASCCAO Approval



10 July 2019

Dear Colleagues,

We propose a new graduate level course, Chemistry 6790, which aims to introduce students to fundamental aspects of scientific writing and communication. This course is predicated on our strong belief that a successful researcher is someone who knows both how to do their science, and also how to effectively communicate their findings through the written and spoken word. Effective writing is an important component of a scientist's skill set, and should be cultivated at an early stage of the career. This requires a knowledge of the writing and publications processes, and a mastery of diverse scientific presentation formats such as research and review manuscripts, abstracts, oral presentations, and social media. No classes at OSU exist that cover these critical aspects of scientific writing, and the proposed class, which will be cross-listed as Microbiology 6790, will directly address this need, and in so doing, provide a new and important professional development opportunity for graduate students in the sciences.

This course will be co-taught by Dr. Michael Ibba (Microbiology), Dr. Karin Musier-Forsythe (Chemistry), and Dr. Susan Lang (Department of English and the Director of the Center for the Study and Teaching of Writing). The only class we know of with any perceived overlapping content is BSGP 7070, Fundamentals of Grant Writing. BSGP 7070 is a 4-credit hour class which is required for all students in the BSGP graduate program, where students solely focus on preparing fellowship applications and candidacy exam documents. Dr. Michael Ibba, a co-director of the class, has spoken with Jeff Parvin and Mike Freitas, the co-directors of BSGP (Jeff is also the COM Associate Dean of Graduate Studies), and they did not see any overlap with BSGP 7070; in fact, they welcomed the opportunity for the expansion of diverse writing courses which they believe their students will find of great interest.

We thank you for your consideration.

Sincerely,

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Thomas J. Magliery, Ph.D.

Associate Professor and Vice Chair, Graduate Studies, Department of Chemistry & Biochemistry
Graduate Studies Chair, Chemistry and Biochemistry M.S. Graduate Programs
Co-Director, Molecular Biophysics Training Program
Research 226 CBEC | 614-247-8425
Graduate Studies 1110 Newman & Wolfrom Lab | 614-292-8688
magliery.1@osu.edu

Microbiology 6790 / Chemistry 6790: Special Topics: Scientific Writing Spring 2020

Location: 104 Aronoff

Meeting times: Tues/Thurs 1:30-2:25 (2 credit)

Faculty Instructors:

Karin Musier-Forsyth, 3033B McPherson
musier-forsyth.1@osu.edu

Michael Ibba, 276 Aronoff
Ibba.1@osu.edu

Susan M. Lang, 4132C Smith Lab
lang.543@osu.edu

Course Overview

The purpose of this course is to introduce students to the processes involved in professional or scholarly publication and provide plenty of writing experience. During the first part of the course, we will discuss the process of choosing a venue for publication and the scientific review (the process, the ethics, and writing a useful review). We'll then examine the components of research articles and consider what constitutes productive writing habits for completing primary research articles and review articles. We'll also discuss common writing issues at the organizational and stylistic level. Additional topics will include writing for a lay audience, writing effective abstracts for conference presentations, and writing research proposals. Throughout the course, ethical issues including bias in peer review and plagiarism will be discussed and whenever possible, the writing assignments will be tailored to the students' research interests and needs.

Learning Outcomes (and methods of assessment)

By the end of the course, students will be able to:

- Identify, discuss, and analyze various rhetorical strategies and elements of the writing process as applicable to academic writing
- Critically read published work in their specializations and compose thoughtful, constructive commentary on those works
- Identify and analyze publication venues in their specializations and articulate different requirements of those venues
- Identify and implement appropriate writing strategies for composing works for different publication venues

Required Course texts. We suggest you purchase (Amazon) *Successful Scientific Writing*, 4th edition by Janice R. Matthew and Robert W. Matthews, which will be the primary text for this class.

Additional resources: *Writing in the Sciences*, 3rd Edition by Ann M. Penrose and Steven B. Katz
Other readings available on Carmen.

Description and Guidelines for Assignments

All work submitted for this course should use standard file formats (i.e., DOCX, PPT) and should be uploaded to the appropriate location on Carmen. All major assignments must be submitted to be eligible to receive a passing grade in the course. Due dates are listed in the course schedule or will be clearly announced in class.

Writing Inventory (5%)—first day assignment

Purpose: The writing inventory is an informal assignment in which you discuss your writing experience (academic and/or workplace), writing strengths, weaknesses, and any questions you may have:

Assignment: Write a ½-1 page single-spaced memo addressed to your instructors in which you discuss the following:

- Prior academic and/or workplace writing experience, including amount and types of writing you have done
- Writing Strengths—what do you generally do well when you write?
- Writing Weaknesses—what do you know, coming into this class, that you need help with in regard to your writing?
- Questions about writing or publication processes.
- Goals that you've set for yourself in regard to this course.

Additional major writing assignments –TBA (85%)

Participation (10%)

Your participation grade will be based on your active and quality participation in class discussions, including completion of all class readings and any small written assignments we request.

There is no final exam for this course.

Methods of Assessment

Each assignment will have its own rubric, but the one below gives you a general idea of our expectations.

Grade	Description
A 90-100	Professional quality work Appropriate for workplace distribution, with minimal or no revision. Exceeds assignment requirements using a creative or challenging approach in its style, development and/or delivery. The work demonstrates superior organization, research, visual design and editing.
B 80-89	Adequate quality work Pending some revision, would be appropriate for professional distribution. Meets assignment requirements, following typical genre and style conventions. The work's research, development, organization, style, and visual design demonstrate adequate effort, but with problems in some areas.
C 70-79	Low quality work Requires subsequent development and review before consideration for professional distribution. Meets most of the assignment requirements, yet the work demonstrates more obvious problems in the development, organization, style, visual design and editing.
D 60-69 F 0-59	Poor quality work Fails to complete many of the minimum assignment requirements. The work is lacking in research and development and has serious problems with the organization, visual design and editing. This grade is also reserved for plagiarized work.

Attendance

If you are going to be absent, send instructors an email notification in advance. Since we only meet once per week, you are permitted to miss one class over the duration of the course, but are encouraged not to do so. If you miss a class, you will be required to submit a 1000-word summary of the material assigned that day. **Failure to do so will result in a 10% reduction of the final course grade. Each subsequent absence (in any circumstance) may result in an additional 10% reduction of your final course grade.**

Late Work

Generally, late work is not encouraged. However, if you have an exceptional circumstance that may require you to be late with an assignment, you are permitted one late exception. To qualify, you must submit an email to instructors no later than the original due date, requesting a late exception. Once approved, the extended deadline will be seven (7) calendar days from the original due date. Subsequent late work will be assessed a 10% penalty per calendar day late. Work due on the last day of class may not qualify for a late exception.

Academic misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

Disability services

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, we may request that you register with Student Life Disability Services. After registration, make arrangements as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Diversity statement

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any

individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org.

Title IX

Title IX is clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at <http://titleix.osu.edu> or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu.

Student wellness and counseling services

OSU offers a range of services to assist students experiencing elevated stress levels. Counseling and Consultation Service (CCS; ccs.osu.edu) provides a range of confidential mental health services to students. 24-hour emergency help is also available through the National 24/7 Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org. Wellness Coaching (go.osu.edu/wellnesscoaching) is a free service provided by the Office of Student Life that takes an empowering, strength-based approach to building your capacity to face challenges and navigate transitions in order to create the life you want to live. In addition, the "Student Advocacy Center is committed to helping students navigate Ohio State's structure and to resolving issues. that they encounter at the university" (<http://advocacy.osu.edu/>).

Schedule: The format will generally include a lecture on Tues and an in-class writing/discussion session related to the assignment on Thurs.

Dates	Topics	Readings	Assignment
Week One	Course Introduction, Requirements Getting Started...	Penrose & Katz, Ch. 1, "Science as Social Enterprise." (read in advance of first class)	Writing inventory
Weeks 2-3	Scientific Publication —venues, the submission and review process, the ethics, writing a useful manuscript review	Zucker, "Demystifying the publishing process: a primer for early career investigators" Masic, "Plagiarism in scientific research and publications and how to prevent it" Matthews, Ch 1 Waser, "Writing an Effective Manuscript Review"	Evaluation of resources Manuscript review
Week 4	Writing a Research Paper: What are desirable and undesirable characteristics of articles?	Meo, "Anatomy and physiology of a scientific paper" Matthews, Ch 3-4	Examples of effective and ineffective titles and abstracts
Weeks 5-7	Parts of a Research Paper: Title and Abstract Introduction and Methods Results and Discussion Tables and Figures	Matthews, et. al., Ch 5-9	Abstract draft for work in progress <i>Due: Feb 11 at noon</i> Evaluate an introduction Write an Introduction
Week 8	Scientific Conferences: Titles and Abstracts		Title and abstract for conference submission
Week 9	Writing a Review Article	Daldrup-Link, "Writing a review article: Are you making these mistakes?"	Pitching a review article
Week 10	Spring Break: No class		

Week 11	Writing for a Lay Audience	Penrose and Katz, Ch. 8, “Communicating with Public Audiences”	Write an effective science-related tweet to a lay audience
Week 12	Research Proposals: Where to submit? Coming up with and selling an effective idea/scientific premise	Penrose & Katz, Ch. 7, “Writing Research Proposals” Van Ekelenburg, “The Art of Writing Good Research Proposals” Matthews, Ch 10-12	Proposal aims page opening paragraph and significance statement
	<i>Individual Writing Conferences</i>		<i>Set up meeting time with Susan Lang</i>
Week 13	Research Proposals: Aims and Abstracts Significance and Innovation Design and Methods Peer Review and Revision	Kelly, Sadeghieh, Adeli, “Peer review in scientific publication: benefits, critiques, and a survival guide”	Revised aims paragraph/significance statement and peer review of partners statement
Week 14	Presentations	Lortie, “Ten simple rules for lightning and Pechakucha presentations” Baehr, Ch 17 Matthews, Ch 15-16	Prepare a 5-min lightning talk
Week 15	Lightning Presentations		<i>Presentation in class</i>
	No final exam		Final Reflective Writing