Thesis Writing And Communication in Genetics

Course Syllabus (Spring 2017)

Course number: 01:447:415

Class location: Busch Campus - NHA237

Class meeting times: Mondays from 5:00 PM – 6:20 PM

Sakai site:

Instructor: Dr. Chris Rongo, Ph.D.
Office: 33 Waksman Institute, 190 Frelinghuysen Rd., Piscataway (Busch Campus)
Phone: 848-445-0955
Email: crongo@waksman.rutgers.edu (email is the preferred method of contact)
Office Hours: By appointment. Please email me if you wish to meet. I am happy to work around your schedule.

Course Description: Communication is an essential part of science. Whether it is communicating research findings to other scientists or conveying complex concepts to a lay audience, a scientist must have effective communication skills in order to succeed. Communication in science is typically through publications, posters, or oral presentations. The goal of this course is provide students practice in effectively communicating scientific findings, with particular emphasis on the completion of the Honors thesis. Emphasis will be on analysis of research data and writing the discussion.

Course Goals: Students are expected to:

- Analyze research data so as to write the Results and Discussion sections of their thesis
- Prepare a fifteen-minute platform talk
- Prepare a longer talk for their thesis defense
- Prepare a poster that explains their research to the general public
- Learn to effectively incorporate critiques from peers and faculty in their revision of written and oral communication
- Learn to describe their research effectively, using relevant discipline-specific terminology with precision, accuracy & purpose
- Learn to present advanced scientific concepts through oral presentations and poster formats accurately and effectively.

SAS Core Learning Goals Satisfied by the 447:414-415 combination:

WCr- Respond effectively to editorial feedback from peers, instructors, &/or supervisors through successive drafts & revision
WCd- Communicate effectively in modes appropriate to a discipline or area of inquiry.

Departmental Learning Goal:

- Effectively incorporate critiques from peers and faculty in their revision of written and oral communication
- Effectively describe their research, using relevant discipline-specific terminology with precision, accuracy & purpose
- Accurately and effectively present advanced scientific concepts through oral presentations and poster formats.

Optional Textbook


Note: if you order from Oxford University Press, you can get a 20% discount by using the following code: BURNS2016.
**Academic integrity policy**
Cheating and plagiarism will not be tolerated. In accordance with Departmental and University Policies, violations of academic integrity will immediately be referred to the dean. Violations include: cheating, fabrication, plagiarism, denying others access to information or material, and facilitating violations of academic integrity. See the following website for details: [http://academicintegrity.rutgers.edu/academic-integrity-policy/](http://academicintegrity.rutgers.edu/academic-integrity-policy/)

**Class Attendance (IMPORTANT-READ CAREFULLY)**
Students are expected to attend and be punctual for all classes. Attendance will be taken at the beginning of class. **Students will lose points for habitual lateness.** If you expect to miss a class, you **MUST** use the University absence reporting website [https://sims.rutgers.edu/ssra/](https://sims.rutgers.edu/ssra/) to indicate the date and reason for your absence. An email is automatically sent to the course instructor. If a student misses more than two classes, they will be asked to withdraw (if before the deadline)

**Performance Expectations and Evaluation Methods**
Grades will be based on student performance on exams and homework assignments. Percent contribution towards the final course grade will be as follows:

- 10% Attendance
- 10% Written Review of Other Students’ Introduction and Materials & Methods Chapters
- 20% First Draft of Thesis (Introduction, Materials & Methods, and Results sections)
- 10% Written Review of Other Students’ First Draft
- 25% Quality of Oral Practice Presentation
- 15% Class Participation: Feedback on Students’ Oral Practice Presentations
- 10% Final Revised Thesis

Grades will be calculated based on overall course performance. The following grading scale will be used:

- 90% A
- 85% B+
- 75% B
- 70% C+
- 60% C

I reserve the right to modify the grading scale downward (e.g., making the lowest A an 88%), but I will not adjust the grading scale upward. Grades below “C” will be determined based on the final score distribution at the end of the course.

**Important: points will be taken off for not following instructions or not meeting deadlines!**

**Rules of conduct**
No cell phones are allowed in class. Laptops are permitted for the purpose of taking notes but not surfing the internet or playing games. Such behavior is distracting to other students in the class. If a student is found to have violated this policy, that student will no longer be allowed to bring his/her laptop to class. Recording of lectures or classmate presentations are not permitted.

**What is the class like?**
This is an applied course to help students understand the format and practice of scientific communication. This includes preparing and revising your thesis (in the form of a scientific paper), and preparing and giving presentations (both oral and poster). The course is divided into three components:

**Section 1- Writing and incorporating critiques into revisions**
The goal of this section is to learn about scientific writing principles and to be able to incorporate critiques into one’s own writing. To give a structure to the course, we will begin by discussing the process of a research study and the organization of the thesis. Students will be expected to submit drafts of their Introduction chapter, which will be distributed to other students to review. Students will be expected to review the introductory chapters of other students and provide useful, constructive feedback. A similar process will follow for the Results chapter. Students will use this feedback to edit their thesis and submit a revised version.
Section 2- Experience in preparing, giving, and analyzing scientific oral presentations
Using the material we reviewed in class, you will prepare an oral presentation. You will be assigned a date to give the presentation. Professor and classmates will critique each presentation using a specific rubric. Each of the classmates will upload these critiques to the course website. Critiques and class participation will be evaluated.

Section 3- Creating a scientific poster
Through an iterative process, students will create a poster describing their research project or independent study. At the end of class, the posters will be printed and there will be a poster presentation day. Mimicking a poster session at a scientific conference, faculty members will approach the student and ask questions about the poster.

Information for Student-Wellness Services:

Just In Case Web App (http://codu.co/cee05e)
Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

Counseling, ADAP & Psychiatric Services (CAPS)
(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901 / rhscaps.rutgers.edu/
CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students’ efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)
(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / vpva.rutgers.edu/
The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services
(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 (https://ods.rutgers.edu/)
The Office of Disability Services works with students with a documented disability to determine the eligibility of reasonable accommodations, facilitates and coordinates those accommodations when applicable, and lastly engages with the Rutgers community at large to provide and connect students to appropriate resources.

Scarlet Listeners
(732) 247-5555 / http://www.scarletlisteners.com/
Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.
### Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Day</th>
<th>Time</th>
<th>Topic/Activities</th>
<th>Assignment Due?</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan. 23</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Introduction to Course, Discussion of Thesis Organization and Style</td>
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<tr>
<td>2</td>
<td>Jan. 30</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Introduction to Oral Presentation</td>
<td>Introduction Chapter</td>
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<tr>
<td>3</td>
<td>Feb. 6</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Introduction to Generating and Presenting Figures</td>
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<tr>
<td>4</td>
<td>Feb. 13</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Student oral presentations, with audience feedback</td>
<td>Review of Other Students’ Introductions/Materials &amp; Methods</td>
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<tr>
<td>5</td>
<td>Feb. 20</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Student oral presentations, with audience feedback</td>
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<td>6</td>
<td>Feb. 27</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Student oral presentations, with audience feedback</td>
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<td>7</td>
<td>Mar. 6</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Student oral presentations, with audience feedback</td>
<td>First Draft of Thesis (Introduction, Materials &amp; Methods, and Results)</td>
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<td>8</td>
<td>Mar. 13</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>SPRING BREAK – NO CLASS</td>
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<td>9</td>
<td>Mar. 20</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Student oral presentations, with audience feedback</td>
<td>Review of Other Students’ First Draft of Thesis</td>
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<td>10</td>
<td>Mar. 27</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Student oral presentations, with audience feedback</td>
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<tr>
<td>11</td>
<td>Apr. 3</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Student oral presentations, with audience feedback</td>
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<td>11</td>
<td>Apr. 4</td>
<td>Tuesday</td>
<td>5:00-10:00PM</td>
<td>Honors Day Presentations – LSB Auditorium</td>
<td>Written Thesis, PPT file for Honors Day (submitted via 01:447:409 sakai site)</td>
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<td>12</td>
<td>Apr. 10</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Post-hoc Discussion of Honors Day and Thesis Defense</td>
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<tr>
<td>13</td>
<td>Apr. 17</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Scientific Posters - Introduction</td>
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<tr>
<td>14</td>
<td>Apr. 24</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Scientific Posters – Practice and Assembly</td>
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<tr>
<td>15</td>
<td>May. 1</td>
<td>Monday</td>
<td>5:00-6:20PM</td>
<td>Poster Session</td>
<td>Final Revised Thesis</td>
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### ASSIGNMENTS

**Week 1 Jan. 23 Introduction to Course & Discussion of Thesis Organization**

*In class:* Instructor will describe the learning goals, expectations (completion of thesis, preparation of oral seminar presentation, poster presentation), and course format (relaxed discussion and interaction, student presentations). The outcomes of this semester will include the final thesis, a Powerpoint presentation, a poster, and multiple assessments of your student colleagues’ work. Submissions will proceed via Sakai, ideally in the MS-Word (docx) format. We will review and discuss the overall organization of the thesis.

*Out of Class:* Read “How to Write a Paper in Scientific Journal Style and Format,” by Greg Anderson. Review the PPT from today’s class (Intro to Course, Org of Thesis) and “Thesis Guidelines.” Use it as a guideline for...
updating and finalizing your Introductory Chapter and Materials & Methods Chapter, which will be due as an Assignment uploaded to Sakai by Jan. 30, 6 PM.

**Week 2 ** Jan. 30  **Introduction to Oral Presentation**  
*In class:* Instructor will review the different styles of oral scientific presentation.

*Out of class:* Students will read, review, and critique the Introduction Chapter and Materials & Methods Chapter from two different students in the class (can be found in each student’s Sakai Drop Box around Feb. 1). Students are expected to embed comments and critiques, including substantive and grammatical critiques. Students will be expected to summarize and evaluate each others’ work through a guided critique sheet. Both the edited chapters and the critique sheet will be due as an Assignment uploaded to Sakai by Feb. 13, 6 PM. Students should also review the PPT from today’s class (Introduction to Oral Presentation).

**Week 3 ** Feb. 6  **Introduction To Generating And Presenting Figures**  
*In class:* Instructor will discuss tips and strategies for preparing figures. Instructor will also discuss how to incorporate simple statistical analysis into your written work and oral presentations.

*Out of class:* Students will continue reading, reviewing, and critiquing the Introduction Chapter and Materials & Methods Chapter (the assignment initiated last week). Students should also review the PPT from today’s class (Analyzing and Presenting Data). Students should read “Making Figures Using Powerpoint,” “Scientific Presentations,” and “What’s in a Picture” on the sakai site. Finally, students should start preparing their 10-minute seminar for Honors Day and for the Student Presentations that follow in weeks 4-10.

**Weeks 4-10 ** Feb. 13 - Apr. 3  **Student Presentations**  
*In class:* Three students will make 10-minute presentations followed by 5 minutes for questions. Participation dates are as listed in the table below (in order). Audience members will be expected to ask questions during the Q&A session. Audience members will take notes, as well as complete and submit critiques for each speaker.

*Out of class:* Speakers will review the critiques of their oral presentations from their peers and adjust their talks accordingly. Audience members should continue to practice and hone their presentation. Students will also make changes to their thesis based on the previous critiques of their submitted draft. Finally, they will create a draft of the Results section. This thesis draft will be uploaded to Sakai by Mar. 6, 6 PM.

**Week 7 ** Mar. 6  **Critiques of Revised Thesis**  
*Out of class:* Students will read, review, and critique the updated thesis from two different students (different from the previous two students) in the class (can be found in each student’s Sakai Drop Box around Mar. 7). Students are expected to embed comments and critiques, including substantive and grammatical critiques. Students will be expected to summarize and evaluate each others’ work through a guided critique sheet. Both the edited chapters and the critique sheet will be due as an Assignment uploaded to Sakai by Mar. 20, 6 PM.
Presentation Schedule:

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Weeks 11-14: TBA

Week 15   May 1   Submission of Final Thesis

Out of class: Students should incorporate feedback from their thesis defense and Honors Day into a final revised thesis, which should be submitted as an Assignment uploaded to Sakai by May 1, 6 PM.