

Syllabus
MSCI 201, Scientific Communication, Fall 2014
Sect. 01: M, W, F 11:30-12:20 (room 202); Sect. 05 : M, W, F 2:30-3:20 (room 203)

Instructor: James Borton
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Office Hours: e-mail for appt. MWF 3:30-5:00

Pre-requisites: a C or better in MSCI 112/112L

Required Texts: Greene, Laurence. 2010. *Writing in the Life Sciences: A Critical Thinking Approach* Oxford University Press, 477pp.
Carson, Rachel. 1989. *The Sea Around Us* Oxford University Press, 250pp.
Strunk, William and White, E.B. 2000. *The Elements of Style* Longman, 104pp.

Reading before the class begins:

Supplementary Reading:

Grades will be based on the quality and improvement of writing assignments, as well as on class participation. The reading assignments listed here will not directly factor into the final grade. However, I strongly urge you to read as much as you can of the reading list below. The newspaper and magazine articles will help you become familiar with how professional science writers do what you are going to learn how to do. The scientific literature will give you the background that will allow you to dive into your writing assignments quickly and with confidence.

The Index of Banned Words

Located here: <http://bit.ly/IndexBanned>

This was a list of words that turn up a lot in the science writing student papers. They are typical scientific jargon and constructions that are unacceptable in writing for a general audience. Avoid these words at all costs. Be imaginative in finding alternatives. Your writing will be the stronger for it. Rest assured, we will be reading excellent supplementary readings during the semester.

Magazines and newspapers

Familiarize yourself with some of the leading sources of science writing. As you read articles, think about how they are constructed. Look at the structure of the articles, the ways in which scientists and other people are introduced and quoted in the pieces. Try to find the original scientific papers on which they're based and think about how the writer chose to translate it into a story.

New York Times Science: <http://nytimes.com/pages/science/>

Discover: <http://discovermagazine.com>

Scientific American: <http://sciam.com>

National Geographic: <http://ngm.nationalgeographic.com/featurehub>

Smithsonian: <http://www.smithsonianmag.com/science-nature/>

Course Objective:

The objective of this course is to provide multidisciplinary training in the art of scientific communication. Effective communication is essential in the sciences in order to disseminate new and important findings to both the scientific community and the general public. Scientists must be able to critically analyze and manipulate quantitative data and then simplify and clarify the significance and

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meaning of those data through effective graphic representation, written explanation, and oral presentation.

Core Curriculum:

MSCI 201 satisfies Goal 1 Part B of CCU's core curriculum.

Goal 1. This course will provide multidisciplinary training in the art of scientific communication. Effective communication is essential in the sciences in order to disseminate new and important findings to both the scientific community and the general public. Scientists must be able to critically analyze and manipulate quantitative data and then simplify and clarify the significance and meaning of those data through effective graphic representation, written explanation, and oral presentation.

Part B. Three (3) additional credit hours shall be taken in a course for communicating in the disciplines. This course may, but does not have to be discipline specific, i.e., it may be communicating in the social sciences or communicating in the natural sciences. All courses with this designation will apply to this core requirement.

Student Learning Outcomes:

Upon completion of the course, students should

- have learned how to think critically
- be able to critically evaluate research objective and hypothesis statements
- be able to support their own interpretation of data through logical argument and comparison with published literature
- know the components of, and be able to write an outstanding scientific research paper (including abstract, introduction, methods, results, discussion, and literature cited), reporting quantitative findings and theory with clear graphical and written explanations
- be able to design and produce clear and effective graphs, tables, and figures that clarify and simplify the interpretation of complex data sets. This includes the ability to assess potential options for summarizing and presenting data and to perform the basic calculations and manipulations required of the data sets.
- be proficient in the foundational quantitative skills required to manipulate and interpret scientific data (basic algebra skills, unit conversions, scientific notation, metric units, interpretation of graphs...)
- be able to conduct an effective literature search using library and electronic resources and be able to find and utilize on-line data
- be able to properly cite literature and report statistical results in a scientific paper
- be able to design an effective PowerPoint presentation, including effective organization and content, elements of graphic design, and the use of appropriate software presentation features
- be able to deliver an effective oral presentation, including both content and basic oral presentation skills
- know the ethical considerations associated with scientific communications

Written Assignments: You will write at least two formal unit papers, including summaries in this class, these writing efforts will be at least 800-900 words long (i.e., about 4-5 pages, typed, double spaced). The writing assignment will go through an extensive drafting process, and each will introduce new challenges. As you move through these units, you will focus on readers' expectations and experiment with multiple ways of communicating with those readers.

As you work through the writing/presentation units that structure this class, you will complete frequent informal writing tasks meant to allow you to explore your ideas, flesh out your perspectives, and question. **A syllabus is a general guide to the course. It is not a contract or agreement. The instructor reserves the right to unilaterally change anything contained in the syllabus, including but not limited to, assignments, tests, or grading.**

the materials we are working with. These generative writing activities will take multiple forms, some will be written in class while others will be done during out of class time, and they will vary in length. They are central to the work you will do as a writer, though, as they allow you space and time to work through your thinking.

In addition, you will complete one collaborative research paper on a selected topic to be outlined later in the course. Details will be provided early into the semester. Also, there will be an oral presentation/poster on a peer reviewed journal article on a selected marine science topic and you will create a PowerPoint presentation that explains the article and that uses the article to illustrate components of a scientific paper.

We'll be taking an in-depth look at all aspects of the writing process—generating questions and ideas, organizing and focusing those ideas, drafting, revising, and editing—so that you can become more aware of the choices available to writers and the effects those choices have on the reader. Along the way, we will also be building your vocabulary and honing your grammar skills. Class sessions will be conducted in a student-centered forum with frequent peer essay workshops in preparation for a final portfolio. **Note:** Preparation requires thoughtfully reading the texts, writing down key points and/or questions, and being willing to share your thoughts and reactions during class discussion. Discussions become difficult and quite boring when all members of the class have not read the assigned texts. Respect yourself as a necessary member of this academic community, as well as your fellow classmates, by being prepared everyday. Please note that many in-class writing exercises assume (and depend upon) your having read the assigned material. **Review your syllabus frequently, and plan your workload accordingly.**

As your instructor, I should not be the only reader for your writing; you need to practice writing for a variety of readers, and you need as many readers as you can get, especially readers who are not also evaluating you. For that reason, we'll be doing a lot of peer response exercises in this class. You will comment on your classmates' writing often (in class, during writing workshops, and in structured Moodle peer response actives) and these responses will be important to your development as a writer as they will enrich your classmates' writing.

Academic Integrity and Plagiarism Statement

Violations of the Student Code of Conduct (including but not limited to academic dishonesty – cheating & plagiarism) will not be tolerated and may result in removal from the course and a grade of F. Any such violations will be dealt with in strict accordance to Coastal Carolina University guidelines. Poor grades earned due to cheating or plagiarism cannot be removed through the Repeat Forgiveness Policy. For more information see your Student Handbook or <http://www.coastal.edu/judicialaffairs/codeofconduct.pdf>.

Attendance

Attendance is required. There are no make-up opportunities for any tests, quizzes, or assignments, except for in the case of a documented medical reason, a death in the family, or if a suitable reason has been cleared with the instructor ahead of time. If you miss a class it is your responsibility to find out what you missed and make up the material. As per the University Catalogue, unexcused absences in excess of 25% of the regularly scheduled classes will result in an F for the course.

Grading:

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Tests/quizzes	10%
Research paper	20%
Summary writings/ Response paper	20%
Oral/Poster Presentation	20%
Class participation (peer review/ communication/writing exercises)	20%
Journal for in-class/Final Exam	10%

Grading Scale: A (90-100), B+ (85-89.9), B (80-84.9), C+ (75-79.9), etc....., F (<60)

Journal/Portfolio:

You must keep a typed daily journal that you must bring to EVERY CLASS. You will submit by the day of the final exam. The journal is worth 10 points towards overall grade, and will be graded on content, insight, and quality of writing. I will likely collect and grade these once during the semester, as well as at the semester’s end. I will discuss my expectations for the journal more fully in class. The journal must contain the following:

- (1) Clearly written, chronological summaries of the scholarly content (readings and discussion, and observations of **every class**. Each summary should be no shorter than a medium paragraph (about 100 words). There is no maximum length. **These must be done for every class.**
- (2) Writing-to-learn and other homework and in-class activities that are not for submission.

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Date	Topic	Text/Homework
M 8/18	WEEK 1: SCIENCE & THINKING Introduction to Course: <i>The transcendent importance of scientific communication</i>	Intro. to Writing. Handouts and writing diagnostic, student profile sheet. For 8/20 read chapter 1 in <i>Writing in the Life Sciences</i> .
W 8/20	Class Discussion and Writing Activity	Read closely and be prepared to discuss the process in <i>Writing</i> pp. 3-12. Handout “The Art of Seeing Things” by John Burroughs. http://www.loa.org/images/pdf/Burroughs_Seeing_Things.pdf . Print out and RENNS writing model. Present image to class for observation exercise. Read for Friday, PDF article, “Verbicide.” Assign discussion leaders.
F 8/22	Class Discussion and Writing Activity	Writing exercise on power of observation. In-class writing. Follow-up on assigned reading. Provide writing prompts. Handout “The Growing Inaccessibility of

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		Science.”
M 8/25	WEEK 2: SCIENCE & THINKING/WRITING Critical Thinking	Peer review. Discussion. Written response. Searching for Scientific Literature pp. in <i>Writing</i> 25-40
W 8/27		Grammar handouts. Avoiding wordiness. Specific and concise language. Read pp. 42-50 in <i>Writing</i> .
F 8/29	Class Discussion and Writing Activity	Grammar test/in class writing. Misplaced and dangling modifiers.
M 9/1	WEEK 3: Intro to Writing	Holiday/no class
W 9/3	Overview of Scientific Research Writing	For 9/3 – library introduction to database of Marine Science Journal articles overview. Handouts on peer review articles.
F 9/5	Effective Writing: Clear Sentences “All you have to do is write one true sentence. Write the truest sentence that you know.” Ernest Hemingway	For 9/5: Journal assignment entries. Read Chapter 5 “Revising...” in <i>Writing</i> . Handouts. See “The Role of Collaboration in Scientific Communication.”
M 9/8	WEEK 4: WRITING Effective Writing Cohesion & Paragraphs	Bring to class written assignment. Bring 2 copies.
W 9/10	Sentences and Paragraphs – Review and Practice	Test: Friday Summary Writing. Read <i>Writing</i> Chap. 5 pp. 212-232.
F 9/12	CLEAR SENTENCES	For 9/15: more from <i>Writing</i> in Chapter 5, pp. 234-245. Topic sentences, paraphrasing*, etc.
M 9/15	WEEK 5: SCIENTIFIC PAPERS Summary Writing	Read “Can a Jellyfish Unlock the Secret of Immortality.” http://www.nytimes.com/2012/12/02/magazine/can-a-jellyfish-unlock-the-secret-of-immortality.html?pagewanted=all&_r=0 . Handouts on Research Collaborative Paper/Project Assignment (DUE Mon 11/17 , Read pp. 188- 206 in <i>Writing</i>).
W 9/17	Introduction to Scientific Writing Overview and Components of a Scientific Paper: Use of Ethos, Logos, & Pathos.	For 9/17 Read in <i>Writing</i> pp.272-286 Revising paragraphs. Summary draft due. Peer review.
F 9/19	Presentations Sylvia Earle on TED go to http://www.ted.com/talks/sylvia_earle_s_ted_pri ze_wish_to_protect_our_oceans	Follow-up on research topics and selection of groups of 5 students for assigned topic. Final summary due. (Mandatory

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		journal article activity) and discussion on speaker's (Earle's) use of logos, pathos & ethos. Writing prompt. Handouts.
M 9/22	WEEK 6: Science and other ways of knowing	Bring in completed worksheet and also write a 2-3 page response to TED viewed TED talk. Grammar exercise. Peer review.
W 9/24		Read in <i>Writing</i> pp. 256-273. "Revising Paragraphs." Par. Unity exercises.
F 9/26	Catch-up and Synthesis: Guest speaker	For 9/26: Introduction for Research paper topic/Marine Research/Community Service Project Outline. Assign literary luminaries.
M 9/29	Week 7: The Sea Around Us	Close reading of Rachel Carson's classic. pp.1-36 Expect quiz. Assign new literary luminaries.
W 10/1	Carson continued.	pp.37-74 examine writing style (science terms, vocabulary & more) Assign literary luminaries.
F 10/3	Carson continued.	pp.75-130. Expect vocab quiz. Grammar exercise. Assign literary luminaries. Marine Science Research topic/Outline due.
M 10/6	WEEK 8:	Carson pp.131- 163. In-class paragraph development writing assignment. Assign literary luminaries.
W 10/8	Carson wrap-up. Note: Mid-term grades posted.	Carson pp. 163-243. Writing prompt. Important out-of-class assignment. Distribute Marine Science Research Project Outline.
F 10/10	Student holiday	No class
M 10/13	WEEK 9: SCIENTIFIC PRESENTATIONS	Read in <i>Writing</i> pp. 335-350. Expect exercises. Handout
W 10/15	Scientific Writing	Avoiding sentence fragments. Affect vs. Effect usage. Incorporating quotations and in-text citations.
F 10/17	Scientific Writing	Marine Science Research Outline due. Peer review/presentations.
M 10/20	WEEK 10: Writing/Speaking	Guest speaker Dr. Tim Kana
W	Practice writing/mini-oral presentations	Rachel Carson writing

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10/22		assignment due bring 2 copies. Peer review. Read Barry Lopez's "A Presentation of Whales" here's link http://engl250environarratives.files.wordpress.com/2012/12/lopez-presentation-of-whales.pdf Assign literary luminaries.
F 10/24	Practice writing/oral presentations	Discussion of "Whales" story. Final introduction for research paper due.
M 10/27/	WEEK 11: Rhetorical Goals for Scientific Papers	Read in <i>Writing</i> pp. 380-393 in-class exercises.
W 10/29		More in <i>Writing</i> pp. 395-413. Read scientific paper. Will forward pdf. "Dioxins and Dioxin-Like PCBs in Marine Mammals from Australia."
F 10/31		Exercise on incorporating quotations and in text citations. Read pp. 453-475 Guide to preparing and delivering oral presentation. Handout research citation exercise. Due on 11/3.
M 11/3	WEEK 12: Oral/Poster Presentations	
W 11/5	Oral Presentations	
F 11/7	Oral Presentations	
M 11/10	WEEK 13: Oral Presentations	Exercise on CV preparation/cover letter.
W 11/12		Produce rough CV & cover letter.
F 11/14	Oral Presentations	Note: Draft Collaborative Research paper due. Peer review.
M 11/17	WEEK 14: FINAL ORAL PRESENTATIONS Research Paper Deadline Final Oral Presentations	Submit formal CV and cover letter.
W 11/19	Final Oral Presentations	
F 11/21	Wrap-up Oral Presentations –What did we learn? Final Research Paper Deadline	Please work on portfolio/journal after holiday.
M 11/24	WEEK 15 Thanksgiving holiday.	No class
W 11/26	Thanksgiving holiday	No class

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F 11/28	Thanksgiving holiday Week 16 Monday Dec. 1. Wed. Dec. 3 Last day of class Final Exam TBA	No class. Bring to class journals/portfolios. Assessment.
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