English 492A: Language, Science, and Society

Brief Course Description

There has never been a greater need for writers who can interpret science for a wider public of readers who may have little training or even interest in the sciences. In an American culture in which the gulf between highly specialized science and average Americans—people whose values, decisions, and behaviors have a tremendous impact upon the environment—seems ever widening, the work of the science writer has become increasingly urgent. Language Science and Society examines the work of authors and filmmakers who employ a range of literary, rhetorical, scientific, and visual techniques to write into the troubling gap between what science knows and what general readers need to understand. How do these writers and filmmakers make science and technology accessible and engaging to general readers? What approaches do they use to teach and to delight—to entertain us into becoming more ecologically literate? How do they help us to understand the complex interrelationship between science and culture? We will read prominent examples of American science writing by major figures including Carl Sagan, Loren Eiseley, Rachel Carson, Stephen Jay Gould, Chet Raymo, Michael Pollan, and Bill McKibben. The course will also include the recent documentary films Food, Inc. (2008), King Corn (2007), An Inconvenient Truth (2006), Carbon Nation (2010), and Gasland (2010)—films that attempt, just as do the literary and scientific texts we’ll read, to convey scientific information in a clear and compelling way for the benefit of a general public.

Student Learning Outcomes

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

* Evaluate the circumstances under which it is ethical to employ science (and the language of science) to make arguments about culture and values (CO 12).

* Engage in analysis of a variety of ethical issues at the intersection of science and culture to current problems such as sustainable agriculture, climate change, environmental toxicity, and water management (CO 12).

* Apply a range of critical and rhetorical modes of analysis to interpret works of literary science writing and science-based documentary film, with the ultimate objective of applying these modes of analysis to other problems involving science and culture (CO 13).

* Engage in effective composition and communication (CO 1) and the critical analysis and use of information (CO 3) as a means of addressing significant scientific and environmental issues and debates current in the culture.
* Identify and characterize current scholarly debates (and the opportunities and challenges they present) that exist within current conversations about environmental problems, as well as the role of popular science writing and filmmaking in communicating these problems to the general public (CO 13, CO 3).

* Analyze the multi-disciplinary, multi-generic, and multi-media intersections of science-informed literature and film, with the goal of understanding the relationship of text to image in larger conversations about science and values occurring in the culture (CO 13). In order to perform this synthetic, integrated analysis, students will necessarily need to engage in effective composition and communication (CO 1) and the critical analysis and use of information (CO 3).

Core Objectives

This course satisfies CORE OBJECTIVE 13 (Integration and Synthesis), which focuses on the importance of synthesizing various forms of inquiry and knowledge, and encourages the development of systems of analysis that may be applied in a range of complex situations. Students will be expected to assemble, formulate, and combine knowledge to provide a basis for analyzing complex issues related to science/technology and culture. The synthetic, integrative nature of this core objective necessarily requires that students will engage in effective composition and communication (CO 1), consideration of ethical consequences of their work (CO 12), and the critical analysis and use of information (CO 3).

This course integrates CORE OBJECTIVE 1 (Effective Composition and Communication). Students will be able to effectively compose written, oral, and digital texts for a number of scholarly and professional purposes.

This course integrates CORE OBJECTIVE 3 (Critical Analysis and Use of Information). Students will engage in systematic research, synthesize data being produced in fields relevant to the focus of their investigations, craft and focus meaningful questions, and apply experimental and/or observational approaches to obtain information.

This course integrates CORE OBJECTIVE 12 (Ethics), which helps students develop the ability to consider and analyze their own ethical positions, to interrogate ethical dilemmas, and to recognize the importance of ethics in addressing the social context of environmental and scientific problems. Students will be expected to analyze ethical issues, identify ethical interests at stake in debates regarding science/technology and culture, and integrate and apply knowledge of ethical dilemmas and resolutions in interdisciplinary research.

Assessment Methods

CO 13 (Integration and Synthesis), will be assessed in two ways. First, examinations will require not only analysis of scientific concepts and textual excerpts, but also analysis of still images and film clips, and thus require the integration of textual and visual analyses.
Second, the final essay in the course will require the sophisticated integration of scientific literacy, textual analysis, visual analysis, ethical consideration, research skills, writing skills, and direct engagement with a specific, complex problem at the intersection of culture and environment.

CO 1 (Effective Composition and Communication), will be assessed through the written portion of the examinations, and by the major final essay in the course, which requires substantial and sustained clarity in execution and communication. The course also has an evaluated participation component, which encourages, evaluates, and rewards regular, clear oral communication and discussion of key ideas and concepts.

CO 3 (Critical Analysis and Use of Information), will be assessed primarily through the final essay, which requires substantial research, analysis of truth claims originating in various points of view, evaluation of the credibility of sources, synthesis of information produced through a variety of research methods, and application of research findings in a substantial, clearly written, and properly documented essay.

CO 12 (Ethics), will be assessed through essay questions on the examinations, as well as by the major, final essay in the course, which requires students to closely analyze the ethical dimensions of the social or environmental problem of their choosing, and to take a reasoned, well-researched, carefully articulated, position on the issue or controversy under discussion.

Required Texts

Electronic Reserves

The following texts are available through electronic reserves, a link to which you’ll find on our class Webcampus page.


Books

Knopf, ISBN 0394701577
Rachel Carson, *Silent Spring* (1962)  
Houghton Mifflin, ISBN 0618249060

Norton, ISBN 039330857X

Cowley, ISBN 156101236X

Penguin, ISBN 0143038583


**Films**

(You will be required to screen these films, but you are not required to purchase them. Details regarding film reserves and screening methods follow later in this syllabus.)


Aaron Woolf, *King Corn* (2007)


Peter Byck, *Carbon Nation* (2010)


**Course Requirements**

**Required Films**

You are required to screen all the films assigned in the course, but you are not required to purchase them. You can access the films in several ways: 1. purchase them (used prints of many of these films are inexpensive online through Amazon.com and other distributors); 2. obtain them from Netflix, either on DVD or streaming (see notes below for which films are available for streaming on Netflix); 3. use Amazon.com, which allows streaming for the small fee of $2.99 (or, in a few cases, $3.99; see notes below for which films are available for streaming on Amazon); 4. check them out from the Multimedia Desk in @One in the KC and screen them there. You may screen at individual stations, or together with other classmates in KC 110 or 111, small rooms which can be reserved by calling 682-5684. I’ve placed one DVD print of each film on reserve at the Multimedia Desk, where they will remain throughout the semester. (Note that the KC has multiple prints of all assigned films, so if you need a film that is being
screened by another student when you need it, be sure to ask if another print is available.) However you choose to screen the films, PLEASE do not screen at home under typical TV viewing circumstances, with interruptions and distractions!

**Films on Reserve at the Multimedia Desk in @One in the Knowledge Center**
(In order of appearance; one DVD print of each film will remain on reserve all semester. Notes below also include information about whether the films are available for streaming on Amazon.com and/or Netflix.)

[94 min] DVD 4045
Available for streaming on Amazon.com
Available for streaming on Netflix

Aaron Woolf, *King Corn* (2007)
[88 min.] DVD 3106
Available for streaming on Amazon.com
**NOT available for streaming on Netflix**

[100 min.] DVD 2626
Available for streaming on Amazon.com
**NOT available for streaming on Netflix**

Peter Byck, *Carbon Nation* (2010)
[86 min.] DVD 4817
Available for streaming on Amazon.com
**NOT available for streaming on Netflix**

[104 min.] DVD 4883
Available for streaming on Amazon.com
Available for streaming on Netflix

**Attendance and Participation**
This is your class and its success will depend upon the regular, active contribution of your ideas. Most of each class meeting will be devoted to guided discussion, and your participation will be encouraged and, hopefully, inspired. Please attend class regularly, punctually, and actively, with your questions and ideas ready. Your participation is very important to the success of the course. It is also important to your own success in the course, since participation constitutes a substantial part of your final grade, and will also be reflected in how well you do on examinations and on the final essay.

Your level of participation in class is evaluated holistically at the end of the semester: A = excellent contributions to class discussion, offered regularly; B = excellent contributions offered occasionally, or good contributions offered regularly; C = good contributions offered occasionally; D = respectful listening; F = unacceptably poor
attendance. To participate effectively you must complete the assigned readings and screenings and think carefully about them in advance of our group discussions.

Please be aware that in addition to attending class and doing your reading, you cannot succeed in this course unless you are committed to screening all of the assigned films.

Examinations
Specifics: We will have three, equally-weighted examinations, which will be entirely closed-book. Each exam will cover only material studied since the last exam (in other words, exams are not comprehensive). See your schedule for dates and times of exams, all of which will be held in our usual classroom. Please bring blue books to all examinations. Examinations will contain a substantial writing component.

Objectives: The objective of the exams is to reward your diligence in keeping up with the substantial reading and screening required in the course, to ensure that you are gaining an adequate understanding of assigned materials, to sharpen your skills as a critical thinker and reader, and to offer you an opportunity to demonstrate your understanding of the major themes, ideas, and techniques engaged by the writers and filmmakers whose work we will study.

Relationship of Examinations to Core Objectives: Examinations are directly connected to CORE OBJECTIVE 9—Science, Technology, and Society, in that they require students to analyze texts and films that explore the applications of science and technology in societal contexts. Students will be expected to explain how these texts and films demonstrate the relationship of science/technology to problems of societal concern. Exams will also be connected to CORE OBJECTIVE 12—Ethics, because the essay component of the test will require that students analyze ethical issues and identify ethical interests at stake in debates regarding science/technology and culture. Exams also work to assess the achievement of CORE OBJECTIVE 13—Integration and Synthesis, because they demand that multi-media, interdisciplinary analysis, discussion, and communication be applied to complex societal problems found at the nexus of science/technology and societal problems.

Essay
Because I would like you to have the opportunity to try your hand at some popular science writing of your own, your major essay in this class will be the Science Narrative (see schedule for due date). This essay should be 10-12 pages in length. For the Science Narrative essay assignment you will identify a scientific issue or problem about which you would like to educate a general audience, and then craft an essay that communicates your scientific topic in a clear, useful, accessible, and compelling way. By the time this essay is due you will have experienced many fine examples of popular science writing, and we will have examined many useful techniques and approaches in our class discussions. Because you will have the opportunity to employ some of the techniques you’ve studied—and perhaps to devise some of your own—whatever approach you settle on will thus put your science narrative “in conversation” with the authors, texts, and/or major themes of the course. I also hope this assignment will help you to think more clearly about science writing, increase your sensitivity to language and rhetoric, and improve the clarity and effectiveness of your writing. Your written work should enhance your own understanding
of your topic while also extending your insights to the readers of your work. We will
discuss the essay in greater detail well before it is due.

Topics: You will choose your own topic and approach, but I will give you
guidelines and suggestions to help you along, and we will discuss the assignment and
possible approaches to it well in advance.

Documentation: Be sure to properly document all sources used; if you are uncertain
about how to properly document the words or ideas that you borrow and apply in your own
writing, be sure to ask me, or a reference librarian, or consult the *MLA Handbook*. Your
obligation to pay your intellectual debt by clearly documenting borrowings of course
extends to all online sources. We will discuss proper documentation in class, but when in
doubt, please do ask.

Finish: By “finish” I refer to the overall clarity and effectiveness of your writing,
and the care with which your work is prepared. Your essays should be carefully structured,
clearly written, and meticulously proofread. A poor presentation is more than simply a
matter of cosmetics; it damages your credibility with your audience by suggesting that you
don’t care enough about your own ideas to work hard to convey them clearly and cleanly.
Because the clarity of your prose is vital to the effectiveness of your argument, a poorly
written (or proofread) essay is a poor essay, however brilliant conceptually.

Format: Essays should be typed, double-spaced, and have the pages numbered and
stapled together. Please include your name, my name, the date, and a title. A cover page is
not necessary. I prefer that your essays be either double-sided or printed on the reverse
sides of previously used paper (at the very least, please use recycled paper).

Late Papers: Late essays will be reduced by one full letter grade (B to C, etc.) for
each weekday they are late. If you are late to class on the day your paper is due, your essay
will be reduced by one-third of a letter grade (B to B-).

Relationship of Essay Assignment to Core Objectives: This ambitious research and
writing project measures achievement of CORE OBJECTIVE 9—Science, Technology,
and Society, because it requires students to directly connect science and technology to real-
world problems by studying the applications of science/technology in societal contexts.
The focus of this assignment will necessarily require that students articulate the ways in
which society is transformed by science/technology, and will necessitate that they integrate
and apply what is learned in their research to the relationship between science/technology
and social issues in interdisciplinary contexts. The paper will also speak to CORE
OBJECTIVE 12 because it requires that students think deeply and carefully about the
ethical problems and dilemmas inherent in the kinds of societal problems being addressed
by science/technology. The analysis required by the essay will involve identification of
ethical interests and positions important to debates regarding science/technology and
culture. The assignment is also conceived to assess achievement in CORE OBJECTIVE
13—Integration and Synthesis, because this essay specifically requires interdisciplinary
research, analysis, and communication of the kind that is necessary to address complex
problems found at the intersection of societal problems and science/technology. The
synthetic, integrative nature of this assignment necessarily requires that students will
engage in effective composition and communication (CO 1) and the critical analysis and
use of information (CO 3) within interdisciplinary contexts.
Grading

We will use a “plus and minus” grading system. The grades in the course will be distributed as follows:

- Attendance & Participation 10%
- Exam #1 20%
- Exam #2 20%
- Exam #3 20%
- Essay 30%

Note that regular, punctual attendance and active participation will also tend to increase your scores on both exams and essays.

Evaluation of Work

A range indicates Superior Work: A level of achievement so outstanding that it is normally attained by relatively few students; B range indicates Very Good Work: A high level of achievement that demonstrates clearly better than adequate competence in the subject matter / skill; C range indicates Adequate Work: A level of achievement reflecting adequate competence in the subject matter / skill; D range indicates Minimally Acceptable Work: A level of achievement that meets the minimum requirements of the course; F indicates Unacceptable Work: A level of achievement that fails to meet the minimum requirements of the course.

Academic Success Services

Your student fees cover use of the Math Center (784-4422 or www.unr.edu/mathcenter/), Tutoring Center (784-6801 or www.unr.edu/tutoring/), and University Writing Center (784-6030 or http://www.unr.edu/writing_center/). These centers support your classroom learning; it is your responsibility to take advantage of their services. Keep in mind that seeking help outside of class is the sign of a responsible and successful student.

Statement on Audio and Video Recording

Covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may be given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded.

Online Course Evaluations

Your opportunity to evaluate this English course will appear two weeks before the last day of classes in the form of a new course on your WebCampus home page. This new course contains only the evaluation survey. These online course evaluations are extremely important to your instructor and to the Department of English, so please take a
few minutes to complete your course evaluation when it becomes available. The evaluation is completely anonymous and your comments can never be connected with your name. Instructors cannot see the evaluation course on WebCampus and will not have access to the contents of these evaluations until after final grades have been posted.

Disability Issues

I am committed to equal opportunity in education for all students, including those with disabilities. Any student with a disability is requested to speak with me and with the Disability Resource Center (Thompson Building, suite 101) as soon as possible to arrange for appropriate accommodations.

Honor

In this class your name is your pledge, and you will be held strictly accountable for the integrity of your work. In our global village, only 1 person out of 100 has the opportunity to receive a college education. Thus, it is my firm policy that plagiarism or cheating of any kind, of any scale, and on any assignment will result in a failing grade for the course and the filing of a formal accusation of academic dishonesty. (For more information, see the UNR General Catalog.) In this course we will talk specifically about what constitutes plagiarism, how to avoid it, and how to properly cite sources, but be absolutely certain that you pay your intellectual debt by clearly documenting the sources you use. Please don’t hesitate to ask me about this if you have specific questions. For now, simply consider the following: Any time you use anyone else’s words (either a paper, paragraph, sentence, or short fragment) and do not give credit to the original author, you are committing plagiarism. You may not use essays written for other courses to fulfill the requirements of this course; to do so constitutes a violation of academic honesty and will be treated as plagiarism.
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SCHEDULE

Day/Date: Authors, Readings and Screenings, and Due Dates (in boldface)

TU 1/21: Greetings and discussion of syllabus and course requirements

TH 1/23: Introductions to each other and to the goals and emphases of the course

TU 1/28: From online course reserves:
Carl Sagan, “You are Here” (from Pale Blue Dot: A Vision of the Human Future in Space, 1994)
Carl Sagan, “No Such Thing as a Dumb Question” (from The Demon-Haunted World: Science as a Candle in the Dark, 1995)

TH 1/30: Loren Eiseley, The Immense Journey (1959)

TU 2/4: Loren Eiseley, The Immense Journey (1959)

TH 2/6: Rachel Carson, Silent Spring (1962)

TU 2/11: Rachel Carson, Silent Spring (1962)

TH 2/13: Stephen Jay Gould, readings from Bully for Brontosaurus: Reflections in Natural History (1992): Prologue and essays # 4, 8, 9, 16

Essays # 21, 22, 31, 32

TH 2/20: Chet Raymo, The Soul of the Night (1985)


TH 2/27: EXAM #1 (please bring a blue book)

TU 3/4: Exam review and essay writing workshop


SPRING BREAK
        Aaron Woolf, *King Corn* (2007)

TH 3/27:  NO CLASS (attend Robert Sickels event this afternoon; details TBA)

TU 4/1:  Aaron Woolf, *King Corn* (2007)


**TH 4/10:**  EXAM #2 (please bring a blue book)

TU 4/15:  Exam review and essay writing workshop


        Peter Byck, *Carbon Nation* (2010)


TH 5/1:  From online course reserves:

**TU 5/6:**  Open day (TBA)
        **ESSAY DUE** (at start of class)

**TH 5/8:**  EXAM #3 (12:30-2:30, in the usual room; please bring a bluebook)