Foundations of Science Communication

COMM 1501

Course Outline

September-December, 2010

Professor: Patricia Parsons APR, FCPRS
Office: Seton Annex #33
Phone: Home office: 823-1112; MSVU 457-6481
Fax: 823-1112
E-mail: biomed@eastlink.ca

Office Hours: MW 1000-1100 hrs or by appointment
Class Hours: MW 0830-0945 hrs
Web Site: MSVU Moodle live site

Course Overview

This course is an introduction to the discipline of science communication and is focused on three broad areas: public understanding of science as an important cultural, economic and political issue; science communication as an academic field of research and study; and science communication as a specialty of public communication practice. We will discuss the *who, what, where and why* of science communication.

The overarching goal of this course is to help you to develop an understanding of science communication as a field of practice with a sound theoretical foundation.

The overarching goal of this course is to help you to develop an understanding of science communication as a field of practice with a sound theoretical foundation. It provides the frame through which other communication and science courses might be viewed. You will also have an opportunity to examine your own perceptions of the place of science and technology in the world.

Pre-Requisite

Admission to the B.Sc. (Science Communication) or permission of the professor.

Course Objectives

On successful completion of COMM 1501, you should be able to:

1. Discuss science communication as a field of professional practice and an academic discipline.
2. Define "science" and discuss how it is experienced in our culture.
3. Define the term "public understanding of science" and discuss how it affects the work of science communicators.
4. Demonstrate an understanding of how science is reported in the mass media.
5. Discuss the impact of both traditional mass media and the new social media on the public understanding of science.
6. Identify issues related to accuracy in scientific reporting.
7. Discuss where science knowledge is disseminated.
8. Discuss the current state of scholarly research on science communication.
9. Differentiate between popular science and 'real' science.
10. Identify instances of 'pseudoscience.'
11. Discuss the official role of government entities in communicating about science.

Student Responsibilities

Each individual student is responsible for the following:

- Attending all classes; reading all assigned materials; completing all assignments.
- All assignments have strict **deadlines** to which we will adhere unless you are in a coma. Assignments are due at the beginning of the class on the scheduled date or at the noted time for upload. Late assignments will lose 20% per day starting on the day that they are late. For example, a paper passed in at 1 pm on a day when it is due at 8:30 am will lose 20% that day. If it is passed in the next day, it loses another 20% and so on. If you are going to have difficulty meeting a deadline, discuss it with me **in advance** and it may be possible for us to make other fair arrangements if I am convinced of the validity and seriousness of your problem.

All assignments have strict deadlines to which we will adhere unless you are in a coma.

- All assignments must look professional.
- "University regulations on Plagiarism and Cheating will be strictly enforced. These regulations are posted on boards and are found in the university calendar." I am well aware of the Web paper mills and I will seek out the source of any paper that looks fishy to me. "Correct use of language is one of the criteria included in the evaluation of written assignments." MSVU Calendar

- Adhere to the guidelines of the American Psychological Association for preparation of academic papers. This is the Department of Communication Studies style guide for academic writing. (It is not used for new, feature, business or public relations writing). The complete APA guide is always on reserve in the library or you can refer to the précis on the course web site. In addition, there are lots of other web sites that provide excellent explanations of the details of APA style.

- Please! During class, no caps with peaks and no gum chewing! And absolutely no cell phone usage. Phones should be turned off or on vibrate only – but if they are on vibrate, unless you have a family emergency it will be considered disrespectful of all of us if you check your messages. I will afford you the same courtesy. And please be on time. Latecomers disrupt discussion. Use of a laptop in class is subject to class consensus. In any case it may be used only for note-taking. If you are using it in class for any other activity, you will be asked to either leave the classroom or put it away.

Department of Communication Studies Writing Competence Requirement

* BASIC WRITING COMPETENCE IS A NECESSARY CONDITION FOR PASSING THIS COURSE

Writing competence is a requirement in all department courses, and it must be demonstrated in all classes.

Because writing is an important part of our field's professional practice, the Department of Communication Studies cannot allow its students to graduate or intern if they do not have the ability to write correct English. Consequently, writing competence is a requirement in all department courses, and it must be demonstrated in all classes. **This means that students who fail more than one assignment in this course due to a lack of writing competence will not pass, regardless the accumulation of points they achieve through team work, class participation, and the like**.

The department plays a significant role in developing student writing; however, it does not offer instruction in basic writing skills because these skills are beneath the academic level at which PR courses occur. The faculty presumes that every student's general education included twelve years of writing-skills training, and therefore expects an English language competence in grammar, spelling, punctuation, and semantics. The responsibility to achieve that minimal standard lies with the student.

The professor will not suspend this requirement by virtue of a student's willingness to obtain remedial writing instruction. The department requires the actual existence of writing skills, rather than the hope or the promise of these skills, as a condition for advancing students.

Reading Assignment

Is there any point in a professor calling his or her reading assignment "required"?

Either you will complete the reading necessary to learn as much as possible and complete in a meaningful way the assignments or you won't; and the outcomes will reflect this choice. Much of the necessary material to be learned in this course will be a result of your engagement with the material in the classroom. However, the classroom material is not a regurgitation of what is in the textbook; the two are complementary. Indeed, if you are planning to pass this course, you will complete the assigned reading which is as follows:

The classroom material is not a regurgitation of what is in the textbook; the two are complementary. If you are planning to pass this course, you will complete the assigned reading…

Brake, M. & Weitkamp, E. eds. (2010*). Introducing science communication: A practical guide*. Basingstoke, UK: Palgrave Macmillan.

Class Web Site

The companion web site for this course is located on the MSVU Moodle Live server. As a registered member of COMM 1501 you have access to it. If you are not familiar with using a companion web site for a university course, now is the time to get comfortable. You should check this site at least once a week. Uses:

- I will use it to share online resources with you as the course progresses. This includes class slide presentations.
- I will use it to message you in the event of class cancellations etc. or to post news of interest to all. You can also post news.
- We can use it to discuss issues that arise in class.
- You will use it to upload some of your written assignments.

Success means meeting or exceeding the course objectives as set out at the beginning of the term. Success is measured by outcomes, not effort.

Suggestions for success in the course

Believe it or not, professors truly want their students to succeed. However, success means meeting or exceeding the course objectives as set out at the beginning of the term. Success is

measured by outcomes, not effort. That said, outcomes reflect effort and adherence to a few simple guidelines.

1. Be punctual. The class begins early, thus it's important to organize yourself so that you arrive in class before we begin. Consider arriving at 8:20 am to allow enough time to settle in before we begin. Feel free to bring your breakfast as long as it is not in any way noisy or smelly and you clean up after yourself.
2. Unless you are deathly ill or a first-degree relative has died, attend every class.
3. Do all the assigned reading before class so that you can engage in cogent discussion.
4. Complete all required and suggested class activities.
5. Meet every deadline.
6. Adhere to the course policies.
7. Plan on about 6-8 hours a week of work on this course outside the classroom.
8. Avoid getting behind in your reading.
9. Visit our Moodle site regularly (every 2-3 days to check for updates and news posts).
10. Email your professor if you are having any difficulties meeting the course expectations.
11. Read a national and a local newspaper every day.
12. Recognize that there is a lot expected of you and that I have faith that you are up to the task.
13. Do the best work you can possibly muster.
14. Do more than the minimum.
15. Take your focus off your grade and put it on your work; the grade will take care of itself.

Intellectual Property Protection Statement

The lectures and materials provided to students in this course are the property of the professor unless otherwise acknowledged. Class lectures may not be recorded in any form without prior permission from the professor and any guest lecturers who may speak to this class. Recordings, class notes, slides and other materials provided may not be used for anything other than study purposes and may not be reproduced in any manner without permission. Materials may be downloaded from the class site and single copies made for personal academic use.

Marking Scheme

Assignment	Value	Date Due
Science Issues in Public Academic-style research paper and presentation	40% (Paper 25%, Presentation 15%)	Outline: Sept 27 Final paper due: Nov 29 Presentations: Nov 22 or 24
Science in Fiction	25%	Oct 25
Reflections on Science Communication	35%	Dec 6

Assignment Details

1 - Science Issues in Public

The purposes of this assignment which is worth 40% of your final grade for COMM 1501 are as follows:

1) To provide you with an opportunity to explore in some depth a scientific issue of interest to you.

2) To evaluate your ability to analyze and synthesize research materials from both the academic and popular literature.

3) To evaluate your skill in writing an academic paper.

4) To provide you with an opportunity to hone your presentation skills.

Instructions

1. You will select a specific area of interest to you in science and research what has been written about it in the academic literature and compare that to how it has been communicated publicly. This will include a minimum of two scholarly papers and three articles from the popular literature.
2. You will create an outline for the paper and submit it for feedback by September 27. The outline should be in point form and be no more than two (2) ***printed pages***. Please affix your email address to the outline. If you do not include an email address, you will not receive feedback.
3. Once you have received your feedback on your outline, you will complete the research for the paper and proceed to write it.
4. You will prepare a 15- minute presentation based on your paper and present it in class on Nov 22 or Nov 24.
5. The written paper will be uploaded to the Moodle site as a Word (.doc, .docx or .rtf file) by ***11:55 pm November 29, 2010***.
    a. The site will not accept late papers.
    b. Please name your file as follows: lastname_firstname_COMM1501_researchpaper.doc (docx, rtf).
    c. Mac users please save as an RTF file.

Some suggested topics to get you thinking:

HINI flu pandemic
Obesity in Canadian society
Vaccinations and autism
Climate change
Dietary cleansing
Sugar substitutes
Amalgam fillings in dentistry
Bioengineered foods

Safety of Cellular Telephones
Bioidentical hormones

The Grading

The grade for the written portion will be broken down as follows:

- Clarity of thesis and argument
- Quality of the research
- Creativity/innovativeness
- Writing
- Editing
- Academic style

The grade for the presentation portion will be based on the following:

- Clarity & appropriateness of content presented
- Audience interaction
- Organization
- Visuals

The written paper will be marked out of 25, the presentation out of 15 for a total of 40 marks toward your final grade.

2 - Science in Fiction

Being engaged in your own learning is vitally important and being fully participant in class is one way to demonstrate that. Rather than simply assess how often you contribute and the quality of those contributions on a day-to-day basis (although that is certainly expected), this mark will be specifically focused on your participation in the *science in fiction seminar*.

The purposes of this assignment are as follows:

1) To provide you with an opportunity to focus your class participation.

2) To provide you with an opportunity to read a novel or watch a movie and analyze its contribution to public impressions of science and scientists.

3) To evaluate your ability to synthesize information we have discussed in class and apply this to your own interpretation of a fictional representation of science.

The following is the ***tentative list*** of books and movies from which you will choose. Each student will sign up at the beginning of the term and no book or movie may be reviewed by more than one student. Here are your choices:

Books:

- *The Andromeda Strain* by Michael Crichton
- *2001: A Space Odyssey* by Arthur C. Clarke
- *Strong Medicine* by Arthur Hailey
- *Passage* by Connie Willis
- *Bones to Ashes* by Kathy Reichs
- *Bloodletting & Miraculous Cures* by Vincent Lam
- *Contact* by Carl Sagan
- *Frankenstein* by Mary Shelley

Movies:

- *Dante's Peak*
- *Deep Impact*
- *I am Legend*
- *Outbreak*
- *Contact*
- *Avatar*
- *2012*

The final list will be posted once all students have registered for the course and we know how many there will be.

Your 'review' is to be written in 400-500 words and you will present this to the class on October 25 as part of our *Science in Fiction Seminar*. That same day, you will submit your written review to me in hard copy and you will post it on the class Moodle discussion forum created for this seminar.

You will be marked on your ability to succinctly relate the plot and your analysis of how well scientists and the work of scientists are portrayed in terms of accuracy and potential impact both in writing and as a seminar contribution. If you have found others' views on these materials, you are invited to share these as part of your analysis (they must be identified as not your own).

3 – Reflections on Science Communication: Journaling

The purpose of a this journaling assignment is to provide you with an opportunity to synthesize the material that is presented to you in the form of lectures, discussions, guests, videos, reading etc.

This assignment is worth 25% of your final grade for COMM 1501. This assignment resembles a journal. You might consider purchasing a personal journal that you bring to class to make notes that will form the basis of your narrative when you get to your computer later.

After each class is over (I suggest you not wait too long – that night, perhaps), you will write out your reactions to the content, readings and discussions in class with some sense of what you personally have learned. I suggest that before handing this material in for grading, that you copy-edit it.

You will be graded on the thoughtfulness of your reflections, your ability to connect the ideas discussed in class, your analysis of the meaning of the material and of course style issues will play a part. If you miss a class, you must indicate this including your reason for missing the class. You are invited to contribute reflections on missed classes based on your readings etc, but you are subject to losing marks, particularly if you miss any student-led discussions.

The final submission should be typed, double spaced with each entry dated. The pages must be bound in a cover (may be duotang) but please do not use a three-ring binder. ***It is due to be submitted in hard copy at the beginning of class on Dec 6.***

Tentative Class Schedule[1]

Date	Topic	Questions We'll Answer	Reading & Assignments
Sept 8	Introduction to the course	What is this course about and how can I succeed in it? What exactly is a 'foundations' course?	
Sept 13	Science Communication: The discipline and the practice	What is a science communicator and why do I want to be one? What's the difference between popular and academic communication of science?	Introduction
Sept 15	Academic communication of science	How do you read a scholarly paper? How do you write a research paper?	
Sept 20	Science in 'public'	What does it mean for science to be 'public'? How did science fit into our culture historically? How does science fit into popular culture today?	Chapter 2: Science in Popular Culture
Sept 22	Science in 'public' continued…	What does the term 'public understanding of science' mean and how does this concept help us?	Chapter 3: Science & the Citizen

[1] Subject to change

Sept 27	Science in the media – 1	What are the important concepts in understanding the media that I need to know before I can understand how the media deal with science?	Chapter 4: Writing Science
Sept 29	Science in the media – 2	What is a journalist and how does a science journalist differ from a science communicator?	Chapter 5: Broadcasting Science
Oct 4	Science in the media – 3	How has the Web 2.0 changed the media landscape in relation to science communication?	
Oct 6	Science in the media - 4	How is science represented in the media? How could media representation of science be improved? How do science stories get "on air"?	
Oct 11	Thanksgiving	NO CLASS	
Oct 13	Science in fiction … preparation		
Oct 18	Science on Television (Guest Speaker)	Does television present a true representation of scientists & their work?	
Oct 20	Science in fiction	How are scientists and their work represented on TV dramas and in movies? How scientists and their work portrayed in fictional literature?	
Oct 25	Continued…	How do **you** see science in fiction?	***Science in fiction: Student presentations***
Oct 27	Presenting Science	When is it appropriate for science to be presented	Chapter 6: Presenting Science

		directly to the public? How does the make-up of the audience influence science presentations? How are science presentations planned and crafted?	
Nov 1	Science as theatre	How are science centers and museums like theatre? How is science represented by specialized museums etc?	Chapter 7: Communicating Science in Museums & Science Centres
Nov 3	Guest Speaker (tentative)		
Nov 8	Science and the consumer	How is consumer-goods labeling an important part of science communication? How well do labels communicate accurate information?	
Nov 10	Science and activism	How does the concept of single-issue science communication campaigns affect the public understanding of science?	
Nov 15	Pseudoscience	What is pseudoscience, how can we spot it and how does it affect the work of "real" science communication?	
Nov 17	Continued…		
Nov 22	Student Presentations	Does popular presentation of a science issue accurately reflect the true outcomes of scientific research?	***Science Issues in Public: Student Presentations***
Nov 24	Student Presentations…continued		

Nov 29	Science communication & governments	What government bodies are involved in science communication? What kind of public participation is involved?	
Dec 1	Science and risk communication	How well do governments and private entities communicate aspects of 'risk' to the public?	
Dec 6	Course wrap-up		***Science Communication Journals due***

Journals

In addition to reading a minimum of one local and one national newspaper daily, it is very important that you become familiar with the primary scholarly sources in the area of science communication and popular science magazines in the fastest time possible. This will facilitate daily reading and discovery of new knowledge and assist in the preparation of assignments both this term and in the terms to come.

To help you with this process, here is a list of related journals with which you should develop more than a passing relationship. All of these are available through the MSVU electronic database.

Peer-Reviewed Publications

Journal of Science Communication
Science Communication
Communication and Health Outcomes
Health Communication
Journal of Health Communication
Journal of Technical Writing and Communication
Corporate Communications: An International Journal
Journal of Mass Media Ethics
Journal of Communications
Media Studies
Journal of Business Ethics
Critical Studies in Media Communication
Hastings Center Report
International Journal of Media and Cultural Politics
Journal of Broadcasting and Electronic Media
Mass Media
Media, Culture & Society

Public Opinion Quarterly
International Journal of Public Opinion Research
Canadian Journal of Communication
Communication & Critical/Cultural Studies
Communication Quarterly
Communication Monographs
Communication Research
Communication Review
Communication Theory
Critical Studies in Media Communication
Columbia Journalism Review
Journalism and Mass Communication Monographs

Important Science Journals

Angewandte Chemie International Edition
Canadian Medical Association Journal
Canadian Journal of Public Health
Chemical Communications
Child Development Perspectives
The Lancet
British Medical Journal
Journal of the American Medical Association
Journal of the American Chemical Society
Journals published by the American Psychological Association see (http://www.apa.org/pubs/journals/index.aspx)

Organizations with which you should become familiar

American Medical Writers' Association
American Psychological Association
Canadian Science Writers' Association
Canadian Psychological Association
Canadian Association of Science Centres
Science Media Centre of Canada
Discovery Channel
National Geographic Foundation
National Geographic Channel
Discovery Centre (Halifax)
Ontario Science Centre
Suzuki Foundation

Popular Publications

Air & Space
American Scientist

Canadian Geographic
Click (science for 3-6 year olds)
Discover
National Geographic
Nature
New Scientist
Odyssey (science for kids 9-14)
Popular Science
Psychology Today
Science
Scientific American
Scientific American Mind
Smithsonian Magazine
The Scientist
Yes Magazine: Canada's Science Magazine for Kids