

HU4625-01: Risk Communication

Room: 116 Walker
Time: 12:05-12:55 MWF
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this list are posted only to the message originator.*)

Required Texts

Gigerenzer, Gerd. *Calculated Risks: How to Know when Numbers Deceive You*. New York: Simon & Schuster, 2002.

Ropeik, David and George Gray. *Risk: A Practical Guide for Deciding What's Really Safe and What's Really Dangerous in the World Around You*. Boston: Houghton Mifflin, 2002.

Waddell, Craig. Adobe Acrobat or other versions of 4-5 essays. (You can read and print Adobe Acrobat files with the free Adobe Acrobat Reader. If you don't already have a copy of the Adobe Acrobat Reader, you can download one from www.adobe.com/products/acrobat/readstep.html.)

General Course Description

Almost all of us are or will be involved in risk communication—as either producers or consumers—in two broad capacities: as professionals (scientists, engineers, technical communicators, business managers, foresters, etc.) and as citizens.

Historian James Souther claims that since World War II, the need to communicate technical information to the public has been dramatically increased by (1) environmental legislation, (2) the consumer movement, and (3) the advent of the personal computer. In all three of these contexts—but especially in the first two—risk communication plays a key role. In fact, communicating information about the risks associated with (among other things) natural hazards, environmental issues, health, safety, occupational hazards, consumer products, and financial investments is an increasingly important part of the work of both technical experts and professional communicators. This course examines various models of risk communication, the diverse roles assumed by the public under each of these models, and means of ensuring that risks are communicated both effectively and ethically.

As a profession and a subject of scholarly discussion, risk communication is a fairly new field. Nevertheless, the communication about hazards is ancient, diverse, and ubiquitous, including everything from fairy tales to road signs. You have all been subjected to hazard communication from birth (e.g., "Don't touch that stove!"); hence, you are each already hazard communication

experts of a sort. What we will try to do this semester is to (1) pool your expertise (through shared discourse); (2) conceptualize your expertise (that is, abstract from your experience principles of effective and ethical risk communication); (3) inform your expertise (through our readings); and (4) practice your expertise (through your projects).

A Few Key Definitions

The National Research Council defines *hazard* and *risk* as follows:

Hazard: An act or phenomenon posing potential harm to some person(s) or thing(s); the magnitude of the hazard is the amount of harm that might result, including the seriousness and the number of people exposed.

Risk: Adds to the hazard and its magnitude the probability that the potential harm or undesirable consequence will [occur].

National Research Council. *Improving Risk Communication*. (Washington: National Academy Press, 1989.) p. 321. We'll discuss implications of and variations on these definitions over the course of the term.

Public Participation in a Democratic Culture

A central concern in discussions about risk communication has been the role of the public in shaping policies designed to respond to various risks (environmental risks, health risks, etc.). James Petersen contends that "citizen participation [in policy formation] is nearly synonymous with democracy." To work effectively with the public, risk communicators must understand the various ways in which public participation in risk disputes influences risk policy.

In an 1820 letter to William Jarvis, Thomas Jefferson said "I know of no safe depository of the ultimate powers of the society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education." In a technologically advanced democracy, the people risk becoming disenfranchised on an increasing number of issues that entail complex technical information. As Frederick Antczak says in *Thought and Character: The Rhetoric of Democratic Education*:

In democracy, the people rule—that is, they rule insofar as they make their own decisions. But those decisions grow more complex, more intellectually demanding every day. The average citizen . . . is called to deliberate on an increasingly formidable variety of issues, each demanding a different way of knowing. Decisions must be made on, among other things, problems of toxic waste disposal, . . . the reliability of nuclear power plant construction and operation, . . . the proper limits and accountability of recombinant DNA research. . . .

Life in an increasingly technologized society imposes increasing intellectual demands on society's decision makers. . . . If in such an era democracy's decisions are to be made intelligently and effectively, the public must somehow be reconstituted intellectually.

Public participation in public policy formation is not only a fundamental principal of democracy, it is also an essential means to better-informed policy decisions since—among other things—it encompasses a wide variety of perspectives that might not otherwise be considered.

This course examines public participation in public-policy deliberations in a scientifically and technologically advanced democracy. Through some—but not all—of the case studies described below, we will examine means by which non-experts do and can become informed participants in such deliberations, and we will discuss warrants, models, and strategies for such participation. As Jefferson suggests, if decisions about such issues are to be made wisely and yet are not to become the province of technical experts, we must find more and better ways to inform public deliberative processes.

In his *Rhetoric*, Aristotle says that a speaker's character (or ethos), "may almost be called the most effective means of persuasion he possesses" (1356a.12). A key issue in our discussions will be trust in the expert testimony that informs much of our decision making.

General Models for Public Participation

One of many possibilities for taxonomizing various models of public-policy formation is by grouping models in terms of the diverse roles played by experts and the (presumably) nonexpert general public.

- 1. The Technocratic Model:** This model assumes that technical decisions should be left to "experts" in science, engineering, industry, and government and allows no role for public participation or oversight.
- 2. The One-Way Jeffersonian Model:** In 1820, Thomas Jefferson wrote "I know of no safe depository of the ultimate powers of the society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education." One implication of this Jeffersonian vision of democracy is that the public has a right to participate in decisions that affect its well-being, but that it should be empowered to do so, simply and unproblematically, through a one-way transfer of expert knowledge.
- 3. The Interactive Jeffersonian Model:** This model might be considered a more charitable interpretation of the Jeffersonian vision of democracy. Under this model, technical experts communicate their expertise to the public, and the public communicates its values, beliefs, and emotions to technical experts. Thus, while the public adjusts to expert knowledge, experts adjust to public sentiments.
- 4. The Social Constructionist Model:** This model expands upon the Interactive Jeffersonian Model by acknowledging that the values, beliefs, and emotions of experts also play a role in risk communication and environmental-policy formation. Furthermore, technical information also flows in both directions; thus, the distinction between "expert" and "public" begins to blur. The Social Constructionist Model views risk communication as an interactive exchange of information during which *all participants* also communicate, appeal to, and engage values, beliefs, and emotions.

The Underdetermination Thesis

An underlying assumption of this course is an extension to the realm of policy formation of what Mary Hesse and others have called the "underdetermination" thesis. Hesse argues that scientific theories are "underdetermined" (that is, only partly determined) by scientific data in that they are also partly determined by the assumptions, biases, and presuppositions that one holds when evaluating that data: "Theories are logically constrained by facts, but are underdetermined by them: that is, while, to be acceptable, theories should be more or less plausibly coherent with facts, they can be neither conclusively refuted nor uniquely derived from statements of fact alone." Hence,

theory formation (for example, about the causes of global warming) is not a strictly inductive process, and different scientists can derive different conclusions or theories from the same data.

This perspective places scientific theories closer to the realm of deliberative rhetoric than to that of objectively revealed truths. It also suggests that we need to closely examine the assumptions, biases, and presuppositions that shape not only our *perception* of the data, but also our very *construction* of data (for example, our construction of what data is needed for informed decision making and our construction of what counts as valid data). We need to make such biases explicit and question their social, political, and ethical implications. And we need to acknowledge that experts as well as nonexperts are subject to such biases.

Basic Discussion Questions

The course addresses questions such as the following:

1. Why should the non-expert public have a voice in policy decisions that involve complex scientific and technological issues and evidence?
2. If the public is to participate in such deliberations and decisions, how might it do so effectively and ethically?
3. What factors shape the public reception of complex scientific arguments? and how might awareness of these factors be used to construct more effective appeals?
4. When it is unfeasible to include the full public in the deliberative process, how might representative segments of that public be involved in such deliberations?
5. In a diverse culture, how might one present arguments so as to respect diversity, win adherents based on diverse warrants, and challenge members of the community to consider the issue in new ways?
6. Does public testimony—sometimes required by law—merely provide a means of catharsis? or does it genuinely influence the decision-making process?
7. What are the problems with and what are the alternatives to the old technocratic model of decision making?
8. Is the prevailing model of communicating risks to the public primarily a means of understating those risks? If so, can this model be modified such that it might be used to *heighten* public awareness of and concerns about genuine risks?
9. Ultimately, what changes will be needed in formal education, the media, and public advocacy in order to ensure that the people both remain the "depository of the ultimate powers of the society" and are "enlightened enough to exercise their control with a wholesome discretion"?

Summary of Case Studies

1. Sandman's Model of Risk Communication

In his 1993 book *Responding to Community Outrage: Strategies for Effective Risk Communication*, Peter M. Sandman is described as "the preeminent risk communication speaker and consultant in the United States today." In fact, Dr. Sandman is much cited, much sought after

(the consulting list in his c.v. reads like a list of the Fortune 500), and his model is arguably the dominant model of risk communication. However, his approach has been criticized as manipulative.

In this case, we will examine how Sandman defines risk (risk = hazard + outrage). We then break Sandman's definition of risk down into six component parts and examine which of these six components his approach addressed and which it does *not* address and *why*. We will then consider how, by this definition and method, one can claim to—and appear to—reduce risks (as well as "outrage"). (Essentially, by incorporating outrage [emotional response] into his definition of *risk*, Sandman can claim to have reduced the risk when he has simply reduced the outrage.)

Finally, we will examine how Sandman's method—which he suggests is applicable only to *reducing* public outrage—might be adapted to *increasing* public outrage; thereby making this model of risk communication might be made equally accessible to both sides in any given case.

2. Great Lakes Water Quality

Some studies of public participation have suggested that at times it may appear that the public has considerable influence on policy recommendations when, in fact, it has little; this chapter suggests that at other times it may appear that the public has little influence on policy recommendations when, in fact, it has considerable.

This case study of the International Joint Commission's Biennial Meetings on Great Lakes Water Quality suggests that at least some of the IJC's recommendations emerge from an interactive process that includes the five following stages:

1. Folk epidemiology—possibly in conjunction with some preliminary scientific findings—alarms the public about a potential problem.
2. Public testimony on this problem is offered before the IJC.
3. The commissioners refer compelling issues to their various scientific advisory boards for investigation.
4. The scientific advisory boards confirm some of the public's concerns, leading the commissioners to be convinced (prepared to accept an idea intellectually), but not necessarily persuaded (committed to act on the basis of that idea).
5. On hearing further emotional appeals from the public on this issue, the commissioners become persuaded, but contend that public testimony only confirms what they already believe based on scientific evidence.

In at least some cases, the commissioners pursued an issue on the basis of public testimony, sought the support of their scientific advisory boards before committing themselves, and then, having received such support, genuinely perceived subsequent comments on this issue from the public as simply confirming their scientifically based beliefs. Thus, although the commissioners have found it politically expedient to cite public support when presenting their recommendations to legislators, they have found it politically inexpedient to suggest that their recommendations *derive* from public (as opposed to scientific) testimony. These conclusions are based on participant observation at three IJC Biennial Meetings, on in-depth interviews with five of the six IJC commissioners, on interviews with public participants at the meetings, and on analysis of related texts.

3. Recombinant DNA Experimentation

For at least 2,500 years, philosophers and rhetoricians have argued over the role of logic and emotion in deliberative processes. However, this case suggests that key to a successful appeal is not whether it is logical or emotional, but whether it is judged to be appropriate by the audience. An appropriate appeal is one that balances appeals to reason (logos), to emotion (pathos), and the character of the speaker or writer (ethos).

It is in part, at least, our ability to incorporate emotional and ethical appeals into a reasonable decision that separates human decision making from artificial intelligence. Hence, in order to further understand and enhance human decision making, we must determine what makes some emotional and ethical appeals appropriate and others inappropriate in a given context. This case describes how one audience—the Cambridge Experimentation Review Board (CERB)—made such determinations when considering arguments for and against conducting recombinant DNA research in Cambridge, Massachusetts in 1976-77. These conclusions are based on research in the MIT Archives collection on this case and on extensive interviews with the principal participants, including all of the CERB members.

This case also suggests that when public policy decisions or recommendations must be delegated to a subset of the population at risk (such as to the Cambridge Experimentation Review Board), that subset should be

1. Representative of the community at risk.
2. Disinterested in the exclusive benefits in question (i.e., benefits not shared by the general population, such as immediate financial rewards and prestige).
3. Willing and able to inform themselves adequately about the relevant issues.
4. Accountable to the community.

4. Population Pressures

To speak or write effectively, one must develop a good sense of one's audience. Speakers in our complex society often address diverse audiences and are sometimes tempted to appeal to a lower rather than a higher common denominator. For example, in *The Population Bomb*, Paul Ehrlich indicates that he will not appeal to altruistic motives to persuade his audience because

most Americans clearly don't give a damn. They've never heard of the California condor and would shed no tears if it became extinct. Indeed, many Americans would compete for the privilege of shooting the last one. Our population consists of two groups; a comparatively small one dedicated to the preservation of beauty and wildlife, and a vastly larger one dedicated to the destruction of both (or at least apathetic toward it). I am assuming that the first group is with me and that the second cannot be moved to action by an appeal to beauty, or a plea for mercy for what may well be our only living companions in a vast universe.

This case suggests that rather than appealing to only one segment of a diverse audience, a more appropriate approach is the orchestration of appeals. That is, presenting a diverse audience with diverse warrants for pursuing a particular course of action, thereby allowing diverse elements of the audience to select from among those warrants those that are most compelling to them. Some, for example, might find most compelling appeals to economic benefits ("egocentric"); others, appeals to

human health benefits ("homocentric"); and yet others, appeals to environmental benefits ("ecocentric").

Arguably, the most compelling aspect of an enthymeme is its ability to enlist the audience in completing the argument. Likewise, the orchestration of appeals allows the audience to complete the argument by selecting the appeal that they find most compelling. It thereby recognizes and respects diverse values while still taking advantage of the opportunity to present people with new ways of thinking about the issue.

5. The Public Reception of Rachel Carson's *Silent Spring*

"Man's world is manifold, and his attitudes are manifold. What is manifold is often frightening because it is not neat and simple. Men prefer to forget how many possibilities are open to them."

Walter Kaufmann, Prologue to Martin Buber's *I and Thou*

It would be convenient to believe that one factor—such as appeal to Cold War apocalyptic concerns—explains the strong public response to Rachel Carson's 1962 classic *Silent Spring*. However—as with most other complex issues—the public response to *Silent Spring* was overdetermined, a process that Raymond Williams defines as "determination by multiple factors." Some of these factors, however, are more easily emulated than others. One such factor is Carson's ability to ally her concerns with the prevailing spirit of the times, which happened to be apocalyptic. Hence, those who would learn from Carson's success are well advised to ally their concerns with the contemporary spirit of the times rather than (as has often been done) to simply generate additional apocalyptic appeals. These conclusions are based on my research with the Rachel Carson Papers at the Beinecke Rare Book and Manuscript Library, Yale University.

Communication Ethics

In the West, theories of public communication can be traced back at least to the conceptualization (that is, the development of teachable principles) of the art of rhetoric in fifth century B.C. Greece. We'll draw upon this ancient body of rhetorical theory as we study risk communication this term. Aristotle (384-322 B.C.) defined rhetoric as "the faculty of observing in any given case the available means of persuasion." A key concern in philosophical discussions of rhetoric has been the extent to which an emphasis on persuasion licenses deceit and manipulation. Plato (427-347 B.C.) and (through him) Socrates (469-399 B.C.) criticized rhetoric for "making the worse appear the better case." Many rhetoricians, however, have been deeply concerned with the ethics of rhetoric. For example, in his *Institutio Oratoria*, Quintilian (A.D. 35-99) wrote

Too much insistence cannot be laid upon the point that no one can be said to speak appropriately who has not considered not merely what it is expedient, but also what it is becoming to say. . . . these two considerations generally go hand in hand. . . . Sometimes, however, the two are at variance. Now, whenever this occurs, expedience must yield to the demands of what is becoming. . . . the end which the orator must keep in view is not persuasion, but speaking well, since there are occasions when to persuade would be a blot upon his honour. (XII.1.8-11)

Good risk communication addresses both what is expedient (persuasive/ effective) and what is becoming (ethical).

Reading and Class Discussion

"We don't understand anything until we've discussed it."

Russian Proverb

This course is based on common readings, on class discussion of those readings, and on the research projects described below. Hence, you should keep up with the reading and participate in class discussion on a regular basis; such discussion provides practice in public deliberation that is fundamental to the goals of this course.

As outlined in the below schedule of assignments and class activities, we'll also view and discuss a number of videos and case studies. For example, we'll view a video based on Peter Sandman's *Responding to Community Outrage: Strategies for Effective Risk Communication*. Sandman provides a perspective on risk communication reflective of industrial priorities. He claims that there are two different genres of risk communication: (1) arousing people whom one believes to be inadequately concerned about risks; and (2) calming down people whom one believes to be overly concerned about risks. He says that his book is relevant only to the second genre of risk communication; we'll examine and challenge that claim.

Research Projects

"Tell me, and I forget. Show me, and I remember. Involve me, and I understand."

In addition to our common readings, you'll work on an individual or a collaborative research project on risk communication in which you do one of the following:

1. Communicate risks to an audience—through a single product (brochure, Web page, videotape, etc.) or through a more ambitious campaign/combination of products—with the goal of reducing those risks *and provide a brief (2-3 page) analysis of your work* (see the Final Analysis section below for details). One way to do this would be by finding a client who needs such work done.
2. Analyze existing risk communication (either a single product or a whole campaign) with the goal of improving that communication, submitting where possible copies of what you've analyzed.
3. Examine and analyze an *issue* (pedestrian safety, STD's, winter driving) instead of a risk communication *product*. In this case, you'll create a report (which might itself be considered an example of risk communication) rather than a brochure, Web page, videotape, etc. What risks are involved with this issue? How might they be communicated effectively and ethically to target audiences. This may or may not include analysis of existing risk communication.
4. Analyze a risk-communication *process* (such as risk communication preceding the launch decision for the Space Shuttle *Challenger*) rather than a risk communication *product*.

In the past, class participants have completed projects on such diverse topics as pedestrian safety, environmental hazards, financial risks, occupational safety, chemical spills, natural disasters, sexually transmitted diseases, substance abuse, other health risks, domestic violence, and child safety. You might want to examine a case that is of regional interest; or you might examine a case—current or historical—that has gained the attention of the national media.

Given that 4000-level courses can be taken by both graduate and undergraduate students, I've tried to keep diverse audiences in mind when selecting texts and designing the project assignment. If

you're a graduate student, you might want to consider selecting option 2, 3, or 4 (above) and using this project as a draft of a master's project, a pilot study for or draft chapter of your dissertation, or a draft conference or journal paper.

The ability to work collaboratively is becoming increasingly important in academic, industrial, political, and other contexts. People in all of these contexts need to pool both their time and their diverse skills in order to solve complex problems and to complete complex tasks effectively. Hence, I encourage you to use this opportunity to work in a collaborative group (consisting of 2-4 people), and I strongly encourage you to form *interdisciplinary* groups in order to take maximum advantage of one another's strengths. If you do join a collaborative group, remember that the others in your group will be depending on you, and your grade (as well as theirs) will in part be determined by your ability to work effectively with them.

As outlined in the schedule of assignments below, you'll work on this project in stages, including a proposal, a progress report, and a final product.

Proposal: Your proposal should be approximately 500-1000 words (two to four double-spaced pages) and should identify (1) the members of your group (if you're working collaboratively), (2) what each of you will contribute to your study, (3) the issue or case you plan to study (topic), (4) how you plan to study it (methods), (5) why you've chosen this particular issue or case, (6) what your final product(s) will be, (7) what you hope to learn from this study, (8) what problems you anticipate, and (9) how you plan to resolve those problems.

Progress Reports: Each of your two progress reports should be approximately 750 words (three double-spaced pages) and should describe progress to date, work left to be done, problems encountered, how you're resolved or attempted to resolve those problems, and (ideally) draft sections of your final project.

Final Analysis: In either providing a brief analysis of your own work or producing a scholarly analysis of someone else's work, you might consider, among other things, (1) the intended audience(s) of the communication; (2) the purpose(s) of the communication; (3) the effectiveness of the communication; (4) the ethics of the communication; and (5) how what you've produced or analyzed fits into—or might fit into—a larger, more comprehensive program of risk communication on this issue. In producing a scholarly analysis, be sure to support your claims with evidence.

If you've chosen option 2, 3, or 4 above, your final project should be approximately 2500-3000 words (10-12 double-spaced pages) and should describe what you studied and why (topic and purpose), how it relates to other reading you've done (literature review), how you studied it (methods), a description of the case (narrative), what you found (results/ thesis and evidence to support your thesis), and what insights you draw from your results (conclusions); for example, what is the cause of what you've found? what is its significance? what should we do about it? what further studies might be warranted? You should also include a list of works cited and, if appropriate, appendices.

Oral Presentation: A 10-12-minute oral presentation (including Q&A) on your project.

Internet Resources

As with most other topics these days, there is a vast amount of information about risk and risk communication available on the Internet. For example, the SAREC (Science of Anticipation Recognition Evaluation and Control of Health Risks) web site <www.sarec.org> includes an extensive bibliography of books on risk assessment and communication. Here are a few others you might want to try:

The Risk Assessment & Policy Association WWW.FPLC.EDU/risk/profRisk.HTM.

The Environmental Communication Resource Center www.nau.edu/soc/ecrc

Center for Environmental Communication Studies www.uc.edu/cecs

Agency for Toxic Substances and Disease Registry: A Primer on Health Risk Communication Principles and Practices www.atsdr.cdc.gov/HEC/primer.html

National Cancer Institute Risk Communication Bibliography
<http://dcccps.nci.nih.gov/DECC/riskcommbib/>

National Library of Medicine Health Risk Communication Bibliography
www.nlm.nih.gov/pubs/cbm/health_risk_communication.html

The Peter Sandman Risk Communication Web Site www.psandman.com/

Risk Communication in Print and on the Web www.fz-juelich.de/mut/rc/inhalt.html

Institute for Risk Analysis and Risk Communication, University of Washington
<http://depts.washington.edu/irarc/>

Risk World's Risk Communication Web Sites
www.riskworld.com/websites/webfiles/ws5aa014.htm

Center for Risk Communication www.centerforriskcommunication.com/home.htm

Society for Risk Analysis, Risk Communication Group www.sra.org/rcsg/rcsgsources.html

Risk Communication In The Context Of Consumer Perceptions Of Risks
<http://www.consumersunion.org/food/riskcomny598.htm>

Evaluation

Your final grade will be determined as follows:

Attendance (43 classes at 4 points each)	172 points
Research proposal	100 points
Progress reports (64 points for each of 2 reports)	128 points
Reading and discussion quizzes (100 points for each of 3 quizzes)	300 points
Oral presentation	100 points
Final research project	200 points
total	1000 points

A:	930-1000 points
AB:	880-929 points
B:	830-879 points
BC:	780-829 points
C:	730-779 points
CD:	680-729 points
D:	600-679 points

F: 599 or fewer points

Attendance Policy ("I must be cruel only to be kind." *Hamlet* III.iv.178)

"Ninety percent of success is just showing up." Woody Allen

Unexcused absences from more than 10 percent of the regularly scheduled classes can be grounds for failing this course. Excused absences include a medical excuse signed by your physician or a personal emergency authorized in writing by the Dean of Students. For a more detailed description of what constitutes an excused absence, see the below excerpt from the *Michigan Tech Student Handbook*:

"Students are expected to attend all classes, including recitation and laboratory sessions, beginning on the first day of regular instruction as stated in the University academic calendar. This date can be found in the Undergraduate Catalog and in the Time Schedule Booklets.

Students having excused absences are permitted to make up graded work. Whenever possible, students should contact the instructor prior to the absence and arrange a mutually acceptable make-up procedure. Otherwise, the students should account for the absence at the first opportunity.

Students who are unable to notify instructors concerning their absence from class or who must notify several instructors on short notice should contact the Office of Student Affairs for assistance.

An absence is excused under the following conditions:

1. A student is participating in off-campus, University-sponsored activities, such as field trips, fine arts performances, intercollegiate athletics, judging teams, etc. The faculty or staff members supervising the off-campus activity will send a notice via e-mail to all academic departments and the Office of Student Affairs before the activity takes place. The notice will include the name and date of the activity, the name of the supervising person, and a list of all participating students.
2. The instructor is assured that a student's absence from class was due to circumstances beyond the student's control. The student must provide verification of the special circumstance if the instructor requests it.
3. Excuses are usually given in the following circumstances: illness, funeral of any relative or close friend, military duty, court appearance, and personal emergencies.
4. The instructor deems it excusable. Some examples might include professional and graduate school interviews, plant trips, job interviews requiring travel, and professional society meetings."

Late Assignments

I won't accept any assignment that's more than two days late. There's no penalty for one late paper (as long as it's not more than two days late); subsequent late papers, however, will be lowered by one part of a letter grade (e.g., from a BC to a C).

Academic Dishonesty (from the *Michigan Tech Student Handbook*)

"Academic integrity and honesty are central to a student's education. Ethical conduct in an academic context will be carried forward into a student's professional career. Academic honesty is essential to a community of scholars searching for and learning to seek the truth. Anything less than total commitment to honesty undermines the efforts of the entire academic community. Both students and faculty are responsible for insuring the academic integrity of the University.

In their academic work, students are expected to maintain personal academic integrity; treat all academic exercises as work to be conducted privately, unless otherwise instructed; ask faculty to clarify any aspects of permissible or expected cooperation on any assignment; and report any cheating activity.

Definitions of academic dishonesty, including plagiarism, cheating, fabrication, and facilitating academic dishonesty, can be found in the Academic Integrity Policy [see below]. Copies of the policy can be obtained from the Office of Student Affairs and chairs of academic departments.

Students found guilty of academic dishonesty can receive a sanction ranging from academic integrity warning to expulsion. Please refer to Student Rights and Responsibilities in the University Community or the Academic Integrity Policy for more information."

Definitions of Academic Dishonesty (from the Michigan Tech Academic Integrity Policy)

"A. Plagiarism: Knowingly copying another's work or ideas and calling them one's own or not giving proper credit or citation. This includes reading or hearing another's work or ideas and using them as one's own; quoting, paraphrasing, or condensing another's work without giving proper credit; purchasing or receiving another's work and using, handling, or submitting it as one's own work.

B. Cheating: Intentional, unauthorized use of any study aids, equipment, or another's work during an academic exercise. This includes unauthorized use of notes, study aids, electronic or other equipment during an examination; copying or looking at another individual's examination; taking or passing information to another individual during an examination; taking an examination for another individual; allowing another individual to take one's examination; stealing examinations. All graded academic exercises are expected to be performed on an individual basis unless otherwise stated by the instructor.

C. Fabrication: Intentional and/or unauthorized falsification or invention of any information or citation during an academic exercise. This includes changing or adding an answer on an examination and resubmitting it to change the grade; inventing data for a laboratory exercise or report.

D. Facilitating Academic Dishonesty: Knowingly allowing or helping another individual to plagiarize, cheat, or fabricate information."

The Americans with Disabilities Act

MTU complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990 (ADA). If you have a disability and need a reasonable accommodation for equal access to education or services at MTU, please call Dr. Gloria Melton, Associate Dean of Students (7-2212). For other concerns about discrimination, you may contact your advisor, your department head, or the Affirmative Action Office (7-3310).

Schedule of Assignments and Class Activities

Dates indicate when reading and writing assignments are due, not when they are given. I've used the following abbreviations for our texts: CR = *Calculated Risks*; RAP = *Risk: A Practical Guide*.

Bring to class each day the book we are currently reading.

Week 1

Monday: Overview of course and syllabus; self-introductions and preliminary brainstorming for projects

Wednesday: CR Chapters 1 & 2; Video: *Plan to Get Out Alive* (30 min.)

Friday: CR Chapter 3; more project brainstorming

Week 2

Monday: **Martin Luther King Day--No Class**

Wednesday: CR Chapter 4

Friday: CR Chapter 5

Week 3

Monday: CR Chapter 6

Wednesday: CR Chapter 7

Friday: CR Chapters 8 & 9

Week 4

Monday: **Project proposal due**; CR Chapter 10

Wednesday: CR Chapter 11

Friday: CR Chapters 12 & 13

Week 5

Monday: CR Chapter 14; Review for Quiz 1

Wednesday: **Quiz 1**

Friday: **Winter Carnival—no class**

Week 6

Monday: RAP Introduction; Video: Peter Sandman's *Responding to Community Outrage* (111 minutes for both tapes)

Wednesday: Read and discuss Case Study 1: critique of Peter Sandman's model of risk communication

Friday: RAP Chapters 1-3

Week 7

Monday: RAP Chapters 4-6; Video: *Toxic Sludge is Good for You: The Public Relations Industry Unspun* (John Stauber; 40 min.)

Wednesday: RAP Chapters 7-10; review for Quiz 2

Friday: **Quiz 2**

Spring Break March 1-9

Week 8

Monday: RAP Chapters 11 & 12; Video: *Michigan at Risk: Betrayal of the Great Lakes* (VHS; 30 min.)

Wednesday: Read and discuss Case Study 2: Great Lakes Water Quality; **progress report 1 due**

Friday: RAP Chapters 13-15

Week 9

Monday:

Wednesday: RAP Chapters 16-18; Film: *An Enemy of the People* (Henrik Ibsen/Arthur Miller) (VHS; 118 min.)

Friday: RAP Chapters 19-20; Film: *An Enemy of the People* (Henrik Ibsen/Arthur Miller) (VHS; 118 min.)

Week 10

Monday: RAP Chapters 21-23; Video on Recombinant DNA Experimentation (VHS; 55 min.)

Wednesday: Read and discuss Case Study 3: Recombinant DNA Experimentation

Friday: RAP Chapters 24-26

Week 11

Monday: RAP Chapters 27-28; Video: *Paul Ehrlich and the Population Bomb* (VHS; 60 min.)

Wednesday: Read and discuss Case Study 4: Paul Ehrlich on Population Pressures

Friday: RAP Chapters 29-31

Week 12

Monday: RAP Chapters 32-33

Wednesday: RAP Chapters 34-36; review for Quiz 3

Friday: **Quiz 3**

Week 13

Monday: RAP Chapters 37-39; Video on Rachel Carson's *Silent Spring* (VHS; 55 min.)

Wednesday: Read and discuss Case Study 5: The Public Reception of Rachel Carson's *Silent Spring*

Friday: RAP Chapters 40-42; Review; **progress report 2 due**

Week 14

Monday: RAP Chapters 43-45; Oral presentations on projects

Wednesday: RAP Chapters 46-48; Oral presentations on projects

Friday: Oral presentations on projects

Week 15

Monday: Oral presentations on projects

Wednesday: Oral presentations on projects

Friday: Oral presentations on projects; course evaluations; **projects due**