

# ENGR 125CS

Group Project Assignment

Assigned: 13 November 2006

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As we have seen throughout the course, engineering projects always involve teamwork. In this project assignment you will be working as part of a team to prepare a group report.

*You and your teammates will work together to prepare a concise written and oral report describing the development of a particular technology over the last 25 years, in terms of:*

- *engineering innovation*
- *social/economic influence and impact*
- *health/safety/environmental influence and impact*

*The report must comment on the parallel influences of each of the three factors and draw a solid conclusion about the observed technological progress.*

Each team will select its top three topic choices from the attached list. Topics will be assigned in random order according to the group preferences, minimizing overlap as much as possible.

## **Written Report Guidelines**

The written report (5-10 pages) must include historical background, examples of progress, and contemporary considerations for the selected technology.

The paper is to be written in a formal style but still at a level appropriate for reading by another student in this class who is not necessarily familiar with the topic. The report must include a strong thesis statement: underline it!

Your report should have clearly labeled sections, making sure that the three parallel influences are covered (innovation, social/economic, and health/safety/environmental). The format is:

- A **cover sheet** with:
  - the title of your paper
  - your names
  - the course number, course title, and semester
- An **introduction**, with your underlined thesis statement, providing an overview of the topic and the paper.
- Three or more **sections** (with headings) containing the report and significance of the findings.
- A **conclusion and summary** section including suggestions for follow-up information.
- A complete **list of cited references** organized by author, including all citation info.

Prepare the report with a word processor and print it using a high-quality printer. Please use 1" margins on all edges of the paper, and number each page.

The report must include cited references with at least three separate sources from print media (books, journals, magazines) and at least three references from the web. The cited references must be *authoritative* sources (see description below).

### **Oral Report Guidelines**

The oral report (15 minutes) will be presented during class time the last week of class (December 4, 6, and 8). Each team member must participate equally in the oral presentation. The oral report format can be a simple oral lecture, but preferably with appropriate visual aids. If you plan to use computer projection please let me know in advance so that we can have a projector and laptop computer on hand.

Oral presentations require a somewhat different approach compared to written reports. For example, you should not just read your written report out loud, but instead take advantage of the oral format for clarity, pace, and excitement. The oral presentation may certainly draw on the written report for content, but it should be prepared as a standalone presentation.

The audience for your oral report will be your classmates. Keep the presentation focused on the needs and expectations of your peers: don't try to impress them with your group's fiendish brilliance, but at the same time don't be patronizing or glib.

The oral report is only 15 minutes long, so it is extremely important to plan and practice the presentation in advance. Your group should decide on perhaps only two or three key points that you want to cover. The presentation should start with a brief overview of your key points, then give the supporting details, and finally summarize by repeating the key points once again. You want to make sure that the audience will remember the major topics even if they might not recall all the details.

Your group must set aside some practice time outside of class to run the presentation with full visual aids and a stop watch. The 15 minute time limit will be strictly enforced because we need to allow sufficient time to accommodate all of the presentations. If your presentation is too long and you are not able to give your ending summary, your grade will suffer.

### **Authoritative References**

Authoritative references are archival, corroborated, and sanctioned.

*Archival* means that the source is currently available, accessible by the public, and is expected to remain available in the future. This would apply to books and magazines in a public library, official government documents, and bona fide electronic document repositories, such as the on-line research archives of academic institutions or professional organizations.

*Corroborated* means that the information appears in at least two separate sources, such as a magazine article by one author and the matching information in a research monograph by another author. Corroboration does not guarantee accuracy, but it helps prevent published errors—either accidental or intentional—from leading you astray.

*Sanctioned* indicates that the information is from a trustworthy and reputable source, such as a published encyclopedia, a scholarly peer-reviewed journal, or a similar source that is known to have reliable fact-checking procedures in place.

### Authoritative examples:

- An article in World Book Encyclopedia.
- A textbook from a reputable publisher such as Wiley, Prentice-Hall, McGraw Hill, etc.
- A news article published in Newsweek or a similar nationally distributed news magazine.
- The official web site of the National Institute of Standards and Technology (www.nist.gov)

### Questionable examples that probably aren't *authoritative* by definition:

- Unreviewed documents from self-published web repositories (blogs, political sites, commercial advertising, wiki sites, etc.).
- Material received via uncorroborated email, via hearsay, or statements solely in oral form.
- Letters to the editor, opinion essays, and other informal personal communication items.
- Videos, books, web sites, or handbills intended to promote a deliberately controversial, decidedly partisan, offensive, or inflammatory viewpoint.

Please use the MLA style guide for all cited references. Order the references by the first author's last name. If the item is anonymous (no author), start the entry with the title.

#### Examples:

Book: [AUTHORS. TITLE. PLACE: PUBLISHER, DATE.]

Lewis, George, and Sylvia Grayson. A Big Red Example Book. New Jersey: Prentice-Hall, 1975.

Journal: [AUTHORS. "ARTICLE TITLE." JOURNAL TITLE VOLUME (DATE): PAGES]

Jones, Sue, Steve Bent, and Shirley Ficus. "Building Tall, Building Small." Chronicles of Montana 21.4 (2001): 49-56.

Website: [AUTHORS. "DOCUMENT TITLE." SITE NAME. DOCUMENT DATE. SITE SPONSOR. ACCESS DATE URL]

Maier, Robert. "ENGR125CS Syllabus." Technology, Innovation, and Society Course. 2006. Montana State University. 7 Nov. 2006 <<http://www.coe.montana.edu/ee/rmaier/engr125/syllabus.htm>>.

## Working in a Group

**Working as a group to prepare a report can be difficult.** It requires some special considerations. This task will be an organizational challenge, both in dividing up the work and in scheduling team meetings. Here are some suggestions.

- Group communication will be vitally important. Exchange preferred contact information (email, phone number, preferred meeting place, etc.).
- Decide right away on regular, mutually convenient meeting times.
- Determine how you want to organize. Will one person be the leader? Will you each find information separately and then combine? Will each person write an entire section of the paper, or simply provide notes and isolated paragraphs? YOU need to decide! However, keep in mind that the final report must be seamless in regard to writing style, so if different people write different sections, you must apply your editing skills to create consistency across the sections.

- Select appropriate internal group milestones and deadline dates.

## Grading

The grading will consist of:

- 20% for completing preparatory deadlines (reference list, draft written report, and active participation in peer review of written reports and oral reports)
- 20% for self and teammate confidential peer review comments
- 40% for the final written report (instructor evaluation)
- 20% for the oral report (instructor and classmates)

Each group will receive a single group score for the final *written* report. Individual student grades will be assigned based on: (a) participation in class activities, (b) self and peer review comments, and (c) oral report participation and quality.

## Group Project Schedule and Due Dates

13 Nov (Monday)	Groups and topics assigned
15 Nov (Wednesday)	In class planning meetings (15 minutes)
17 Nov (Friday)	<u>DUE</u> : preliminary reference list (a hardcopy list of at least six references, three from print media, three from web; one list per group)
20 Nov (Monday)	In class group meetings (15 minutes)
27 Nov (Monday)	In class group meetings (15 minutes)
29 Nov (Wednesday)	In class group meetings (15 minutes)
1 Dec (Friday)	<u>DUE</u> : draft written report—peer review session in class.
4 Dec (Monday)	TEAM PRESENTATIONS (1-6)
6 Dec (Wednesday)	TEAM PRESENTATIONS (7-11)
8 Dec (Friday)	TEAM PRESENTATIONS (12-15)
11 Dec (Monday)	<u>DUE</u> : final copy of the written report

**Topic List**

Each group needs to rank its top three choices: topic assignments will be based on the preference order.

- Automobile airbag systems
- Child safety seats
- Artificial heart
- Satellite television systems
- Mobile telephone
- Computer local area networks (LAN)
- Coal-fired power plants
- Nuclear power generation
- Wind turbine energy
- Microwave ovens
- Radio frequency identification systems (RFID)
- Vacuum cleaners
- Home stereo systems
- GPS navigation for automobiles
- Graphite composite structural material
- Aerosol propellants for spray cans
- Medical diagnostic scans (choose one: x ray, CT, MRI, PET)
- Commercial passenger aircraft
- Athletic shoes
- "Smart" bombs with laser or satellite guidance
- Home video game consoles
- Photovoltaic systems (solar cells) for home use