ENGR 125CS

Group Project Assignment Assigned: 6 November 2009

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 of 3-4 students 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 at least the past 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 of the 9 teams will select its top three topic choices from the attached list. Topics will be assigned in 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).

Prepare the report with a word processor and print it using a high-quality printer. The format is:

- A **cover sheet** with:
  - the title of your paper
  - your names
  - the course number, course title, and semester
- Use **1" margins** on all pages.
- **Number each page**.
- 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.

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 three class sessions (December 7, 9, and 11). 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 bring your laptop to class in advance to make sure it works with the classroom projector!

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 sufficent 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, wiki sites, political sites, commercial advertising, 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 inflamatory 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]
Maher, Robert. "ENGR125CS Syllabus." Technology, Innovation, and Society Course. 2008. Montana State University. 10 Nov. 2008 <http://www.coe.montana.edu/ee/rmaher/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 (the instructor does this evaluation)
- 20% for the oral report (both the instructor and your classmates do this)

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

9 Nov (Monday)	Group topics assigned by this day
11 Nov (Wednesday)	(no class, Veterans Day)
13 Nov (Friday)	In class planning meetings (~15 minutes)

16 Nov (Monday)	DUE: preliminary reference list (one list per group) -- a hardcopy list of at least six references, three from print media, three from web.
18 Nov (Wednesday)	Lecture, plus in-class group meetings
20 Nov (Friday)	Lecture, plus in-class group meetings

23 Nov (Monday)	Lecture, plus in-class group meetings
25 Nov (Wednesday)	(no class, Thanksgiving)
27 Nov (Friday)	(no class, Thanksgiving)

30 Nov (Monday)	Lecture, plus in-class group meetings
2 Dec (Wednesday)	DUE: draft written report—mandatory peer review session in class.
4 Dec (Friday)	Lecture, course wrap-up

7 Dec (Monday)	TEAM PRESENTATIONS (A, B, C)
9 Dec (Wednesday)	TEAM PRESENTATIONS (D, E, F)
11 Dec (Friday)	TEAM PRESENTATIONS (G, H, I)

14 Dec (Monday)	DUE: final copy of the written report

Topic List

Each group needs to rank its top three choices (1 is your preferred choice). The final topic assignments will be based on the preference order, but there is no guarantee that groups will get their top choices.

___ Automobile airbag systems

___ Child safety seats

___ Artificial heart

___ Coal-fired power plants

___ Nuclear power generation

___ Alternative energy systems (choose one: wind turbine, photovoltaic, fuel cells)

___ Highway bridge design

___ Radio frequency identification (RFID) systems

___ GPS navigation

___ Graphite composite materials

___ Hybrid (gas-electric) passenger cars

___ Medical diagnostic scans (choose one: x ray, CT, MRI, PET)

___ Commercial passenger aircraft

___ Athletic shoes

___ "Smart" bombs with laser or satellite guidance

___ Electronic financial transactions (ATM machines, etc.)