Overview

The term project for the semester is a report on the life and accomplishments of a famous structural engineer. You will be working in groups of three or four to complete the project. There are several parts of this project with due dates as listed below.

- **Groups Assigned**: Monday, February 2
- **Subject Proposal**: Monday, February 9
- **Rough Draft**: Thursday, March 26
- **Final Draft**: Friday, April 10
- **Final Report**: Friday, May 1
- **Extra Credit**: Thursday, April 3, 2008 (Optional)

**Famous Structural Engineers**

Below are listed some famous structural engineers that you might consider using as the subject of your report. If you choose to research an engineer not on the list, talk to the instructor before proceeding.

- Daniel Bernoulli (1700–1782)
- John Rennie (1761–1821)
- Benoit Paul Emile Clapeyron (1799–1864)
- Wendel Bollman (1814–1884)
- Carl Culmann (1821–1881)
- Thomas C. Clarke (1827–1901)
- Wendel Bollman (1814–1884)
- Carl Culmann (1821–1881)
- Wendel Bollman (1814–1884)
- Carl Culmann (1821–1881)
- Thomas C. Clarke (1827–1901)
- Ben Rennie (1761–1821)
- Hardy Cross (1885–1959)
- Benoit Paul Emile Clapeyron (1799–1864)
- Ulrich Finsterwalder (b. 1897)
- John Wellborn Root (1850–1891)
- Henry J. Degenkolb (1913–1989)
- Wilhelm Ritter (1847–1906)
- Egor Popov (1913–2001)
- John Wellborn Root (1850–1891)
- Heinz Isler (b. 1926)
- Antonio Gaudi (1852–1926)
- Christian Menn (b. 1927)
- Richard "Bucky" Fuller (1895–1983)
- Leslie E. Robertson (b. 1928)
- Carlo Alberto Pio Castiglano (1847–1884)
- Horst Berger (b. 1928)
- Friedrich Engesser (1848–1931)
- Norman R. Foster (b. 1935)
- Stephen P. Timoshenko (1878–1972)
- Charles H. Thornton (b. 1940)
- Eugene Freyssinet (1879–1962)
- Ray W. Clough (b. 1920)

**Subject Proposal**

As a group, decide the topic of your presentation and turn in a single-page proposal for the subject of your report by Monday, February 9. The proposal should identify the engineer who is to be the subject of your report and give a brief summary of the thesis you anticipate pursuing (see below for details on what would be an acceptable thesis). Your paper thesis may change as you do more research—talk to the instructor if you decide to change the thesis. Your proposal should also list at least three sources (two of which must be books or journal articles) that you intend to consult in your research. You may not use Wikipedia as a source for your paper, but you may use it to locate other primary sources. Only one group will be allowed per individual. Make sure to conduct preliminary research before deciding on a subject to ensure you will have adequate sources. Get started on your research early(!) as you may need to use interlibrary loan for some of your sources.
Report Thesis
You must select a thesis that will require you to synthesize ideas about your subject. That is, you will take information from several sources to describe some aspect of your subject’s engineering accomplishments. For example, answering the following questions might lead to an appropriate thesis:

1. How did the technology available to your subject affect his work?
2. How did contemporary construction techniques affect the work of your subject?
3. What challenges, obstacles, or opportunities did the socioeconomic and political environments of the day afford your subject?
4. How did the available construction materials affect the work of your subject?
5. How did the education and/or practical training of your subject compare to his contemporary engineers?

Your report must also compare some aspect of your thesis to your education and training as a future engineer. For example, if your thesis was to explain how the available technology affected your subject’s work, you would also need to explain how current technology will affect your work as an engineer.

Report Rough Draft
The rough draft should be a complete paper, as it will be read and critiqued by other students outside your group. Four copies of the rough draft of your report are due on Thursday, March 26. There should be no names on the draft (the reviews will be “double blind”—you will not know who reviewed your paper and reviewers will not know the authors of the paper they read). Please note that the intended audience for the report is your structural mechanics classmates.

Report Final Draft
On Friday, April 10 you will turn in a final draft of your report. Turn in your final draft, your draft report submittal, and all peer evaluation material. The work you turn in for the final draft is expected to be of excellent quality and a large percentage of your grade (see “Grading” below) will be based on this final draft. The final draft should:

- Be five pages or less.
- Include a brief summary of the subject’s accomplishments.
- Cite all sources and include a list of references with at least five sources, three of which must be a book or a journal article.
- Follow the style of the American Society of Civil Engineers (ASCE) academic engineering journals (the library has several such as The Journal of Structural Engineering, The Journal of Engineering Mechanics, etc.) in the following ways:
  - Citation of sources and formatting of the list of references. Use the APA citation style in Word 2007,\(^1\) which is probably the closest to ASCE style.

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\(^1\)This may require a little bit of customization, such as suppressing the title (hint).
Captioning of figures and tables.
Inclusion of an abstract (150-175 words).

Note: Use a single column even though the ASCE journals use double columns.

- Follow technical writing standards (see “Effective Engineering Writing” on the course website).
- Use section headings and include introduction and conclusion sections.
- Use 1-1/2 line spacing.
- Be completely free of plagiarism. A good guide for avoiding plagiarism can be found at: http://www.aug.edu/sociology/plagiarism.html
- Include two “important facts” about your engineer that a structural engineer would find particularly interesting. These important facts are not part of the report and should be turned in on a separate piece of paper (handwritten is fine).

You will turn in one copy for the instructor with all group member names.

Wikipedia Update

Based on the information from your report, update the entry (or create a new one) for your subject in the Wikipedia on-line encyclopedia (http://www.wikipedia.org). Add at least four sentences to the article with information on two separate topics. In addition, add at least one reference (web page link or source attribution) to the Wikipedia entry. On the last page of your final draft report give the date you modified Wikipedia and the exact time and IP address (see the history tab).

Peer Critique

Each of you will be reading one report from another group and critiquing it. Part of your grade for this project will be based on your peer evaluation (see “Grading” below). Your effectiveness as a peer evaluator will be graded by the instructor based on the quality of your feedback. Feedback which is restricted to simply reporting typos and spelling errors will be scored low while feedback that is thoughtful and helps to improve the clarity and quality of the writing will be scored high. Use the “Effective Engineering Writing” summary on the class website as a guide in your critique of the paper you are assigned. The peer reviews will be double blind—reviewers will not know which group submitted the paper and the groups will not know who reviewed their paper.

Final Report

The final paper submissions are due on Friday, May 1. Grading of the final submissions will mainly consist of verifying that the groups used the feedback from the instructor on the final draft to improve the paper.

Grading

Your final grade for the term project will be weighted as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Report Final Draft</td>
<td>60 %</td>
</tr>
<tr>
<td>Final Report</td>
<td>20 %</td>
</tr>
<tr>
<td>Peer Critiques</td>
<td>15 %</td>
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<tr>
<td>Wikipedia Update</td>
<td>5 %</td>
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</tbody>
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Peer Evaluations
Scores on the project will be adjusted based on the results from the Comprehensive Assessment of Team Member Effectiveness (CATME):

https://www.catme.org/

Extra Credit
Extra credit will be granted to group members who prepare a display for Engineering Expo on Thursday, April 3, 2008. Keep in mind that the target audience for Engineering Expo is students in grades 7-12. To earn extra credit, the following must be done:

1. Create supplementary materials explaining your subject. This could be a poster, fact sheet, etc. Be creative and remember your target audience!

2. Your display must be setup in the Engineering Expo display room before expo begins on Thursday, April 3, 2008.

3. Turn in a summary sheet to the instructor with the following information:
   (a) The names of the group members who helped with the extra credit portion.
   (b) The approximate percentage of work completed by each group member.
   (c) A list of group members who will be available to help on the day of Expo (Thursday, April 3, 2008). Note that engineering classes are canceled for Expo and many instructors require students to help out with Expo displays. Also, you do not need to fill out an expo project application. I will be doing this for the entire class.
   (d) A suggestion on what to do with any award money received for the display.

The summary sheet is due on Thursday, April 3, 2008.

Extra credit will be awarded based on the following:

1. Scoring from the Expo judging rubric. Specifically, the displays will be judged for the “Appearance of display,” “Educational content,” and “Creativity and originality” entries of the rubric.

2. Reactions from a focus group of students in the target audience.

You can earn up to 10% extra credit on your final report score.

Acknowledgments
This report is based on a similar class assignment described by Thurston (1994).

Reference