University of Iowa  
Department of Civil and Environmental Engineering  
53:159 Air Pollution Control Engineering  
Project Guidelines  

Introduction:  

All students must complete a project detailing an air pollution device or related series of devices, detailing the results of a modeling project predicting the behavior or atmospheric pollutants, or analyzing original data.

The projects must have the following components:

A. Proposal  
B. Organization of a class tour of a facility OR Invited speaker OR in-class demonstration  
C. Design (schematic) of the air pollution control device, including the major elements feeding the device.  
D. Pamphlet, Poster, or Web Page  
E. Set of up to 5 exam questions on the topic  
F. Final presentation (Power Point)  

Characteristics of a Successful Project:

1. An expert. This is someone who already knows quite a lot about the subject you choose. The expert could be someone in your group. It could be the research advisor to one of the members of the group. It could be an engineer or other professional working in the community. Examples have included University of Iowa officials (Management people or professionals from the power plant, facilities management, the Hygienic Lab, Campus Planning), consulting engineers from the community. The College of Engineering Advisory Board and the Departmental Advisory Boards also are populated with professionals who would be interested in supporting student projects.

2. A unique question. This usually means that you will have to collect new data or organize data in a new way. This is actually easier than it might sound. Once you have your expert, they can help you brainstorm to find the question that is interesting and unique. Local issues are easiest to make unique.

3. Detailed calculations. This is an engineering class, and you should use engineering tools to quantify your results. Example calculations might include cost estimates, projections, efficiencies, distributions or magnitudes.

4. Figures. Your results and strategy should be detailed in figures and tables. Figures should be easy to read, detailed, and beautiful.

5. Assessment. Your project should assess your results by comparing with other findings. Put your results into perspective. Discuss the limitations and assumptions. Comment on how the outcome could be refined or improved if you had money. Is your system or outcome feasible?
# Project Assessment

All parts of the project (A-E) must be provided. The lack of any component will result in an overall loss of 20% of the potential score.

Each component of the project will be evaluated with respect to the following characteristics:

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<tr>
<th></th>
<th>A Proposal</th>
<th>B Tour / Demo / Speaker</th>
<th>C Design or Schematic</th>
<th>D Pamphlet Poster Webpage</th>
<th>E 5 Exam Questions</th>
<th>F Final Presentation</th>
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<tbody>
<tr>
<td>Level of Detail</td>
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<td>Organization</td>
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The project will be assessed as a whole to recognize that some projects are more or less focused on different components. For example, a demonstration of the collection of unique data clearly requires more work and planning than a tour of the University of Iowa power plant. Likewise, the production of a detailed website with multiple links requires more work than a pamphlet or poster. The final project score is not a linear combination of the scores for each item. Rather, the matrix above is used to guide the professor and the student in thinking about the quality of each project.