CITY COLLEGE OF NEW YORK
DEPARTMENT OF CIVIL ENGINEERING
CE37200: ENVIRONMENTAL IMPACT ASSESSMENT
SPRING SEMESTER, 2013
GROUP PROJECT

Collectively, you will perform an environmental impact assessment of a proposed project. Each group will focus on a particular environmental attribute. In doing so, you will get a chance to apply class concepts to an actual engineering project and to improve some of your professionalism skills.

You should follow the CEQR Technical Manual[1] exactly and go through the steps to determine a study area, assess existing conditions, estimate impact, assess the impact significance, and propose mitigation measures. Write up your approach and findings following the CE laboratory report format, which you will also use in future classes.

The proposed project is the development of land adjacent to City College as follows:

- Acquire and rezone the area between 141 and 145 St and between Convent Ave and Riverside Dr, and replace existing uses with:
  - 3 new academic buildings of the height, footprint, and occupancy of Steinman Hall
  - 3 new residence halls of the height, footprint, and occupancy of the Towers
  - 1 new 3-level partially enclosed parking garage with the same footprint as the lot next to the NAC
  - Parks occupying the remaining land

- Assume that the new design will bring in:
  - As many additional cars as fill the new parking lot
  - As many additional students as fill the new academic buildings and new residence halls

I've set many interim goals and deadlines to help you learn how to pace yourself through projects that cannot be completed in a single night and that require collaboration. They are given in the last pages of this document.

The project will give you practice in the professionalism skills in Chapter 2 of the textbook:

Roles In the first 4 meetings, each of you will play a different role in the meeting: group leader, facilitator, time keeper, and note taker. You are required to fill each role once, during your group meetings.

Communication Working in groups can be challenging. Do your best to use clean communication approaches such as listening, giving feedback and receiving feedback. Also, please set goals for yourself and your group members that are reasonable and can be met on time. The simplest way to make sure this is the case is for everyone in the group to come to meetings prepared with some idea of what must be done, before any deadlines are set.

[1] http://www.nyc.gov/html/oec/html/ceqr/technical_manual_2012.shtml

GRADING BREAKDOWN

Group work surveys ***5% total = 2.5% each x 2***

In the middle and at the end of the project you will be asked to answer questions about how well your team worked and to give feedback to your team members. The grades for these surveys are based on whether you complete them on time.

Individual work assignments ***35% total = 7% each x 5***

Grades are based on how complete they are and that they are on time. I expect you to improve them for use in the project by giving each other feedback and consulting CEQR.

Group work assignments (for GW1-4) ***10% total = 2.5% each x 4***

Grades are based on how complete they are and whether they are on time. The same grade is given to all group members.

Draft written project (GW5) ***10% total***

Grade is based on how complete it is and whether it is on time.

Final written project (GW6) ***30% total***

Final oral presentation ***10% total***

The final written project and oral presentations will be graded on the following:

- Technical merit: Were the technical requirements of CEQR and CE lab report met?

  Written report: Should contain all sections of the CE laboratory format (suggestions for and analysis of mitigation measures should be a subsection of the Discussion section)
  Oral report: Should contain outline, objective, introduction, methods and materials, results and discussion, conclusions sections only

- Professionalism: Were the requirements given below and in the CE lab report met?

  Written report: 20 pages maximum (not including title page and appendices); present analyses in order they are presented in in CEQR and use the CEQR headings
  Oral report: 10 slides maximum (not including title slide); 24 point font minimum (you may pick the font); Include details on slides, not just headers or placeholders; Everyone in the group must present a section of the oral report

Final project manager ***Add 2%***

The student who serves as project manager on the final project will get this extra credit. They are expected to pull the project together, format it consistently, and write the upfront sections (transmittal memo, table of contents, abstract, introduction) and the ending sections (conclusions, references, appendix) of the project.

Lateness ***Deduct 10%***

Assignments may be turned in up to 24 hours after they are due with a 10% point deduction. If you have a reasonable excuse for missing a deadline

(being too busy is not “reasonable”), please notify Prof Krakauer and your current project manager ASAP.

IDEAS TO HELP YOU GET THE HIGHEST GRADE POSSIBLE

Follow the CEQR Technical manual exactly

Follow the CEQR code exactly and not add steps or use other assessment approaches. (Talk to the instructor if you're not sure what procedure to follow or if the CEQR requirements seem unachievable for your group.)

Follow the CE Laboratory Report format

In each assignment, the bulleted items refer to sections of the CE laboratory report format, posted to Blackboard. While this class does not have a "laboratory" section, the group project involves data collection in the field using the approaches given by CEQR (i.e., existing conditions) and data analysis (i.e., of impacted conditions).

Follow the ASCE referencing format given in your textbook in Chapter 2

Use your own words

Translate the CEQR code into your own words to show you understand it. Do not copy or quote CEQR.

Be organized, clear and detailed

In method sections where you are describing the types of data to collect and how the analysis is done, be detailed and clear enough that someone else could repeat your work without having to refer to CEQR.

Complete individual assignments on your own

You may discuss your ideas with your group members but the work you submit should be your own and in your own words.

Submit your assignments on time

The date and time that each assignment is due is noted on the syllabus.

Complete the surveys as honestly as possible

The surveys are intended to give you and your team member's feedback on how they are doing. You will receive a link by email to complete the anonymous survey and have one week to complete it. The results will be posted to your group folder.

ASSIGNMENTS

PLEASE NOTE: All assignments besides the FINAL project will be graded for completion (i.e., that you attempted all of the requirements) and not correctness. Therefore, if you have questions, please ask before class starts or come by my office. Either way, do not wait for your assignments to be returned to discuss them in your group meetings. Also, please name each of the IW and GW assignments using the filenames given (for example, IW1-yourname).

Individual work assignment #1 (P-IW1)

- Complete these sections of the project
  - Objective: In one to two sentences, state the problem and identify the objective of the experiment and the report. *Note: the problem is that projects cause impact, the experiment will estimate how big the impact is -- explain and expand on these ideas in your objective*
  - Introduction: *Note: strictly adhere to CEQR code and do not use other sources of information*
    - Give the engineering definition of the property being experimentally determined, the quantities it depends on, and its importance or relevance. *Note: the property is the impacted condition of your attribute, in terms of how CEQR defines your attribute*
    - Conduct a brief literature review *-- review recent EISs of other nearby projects to see the extent to which those projects impacted your attribute, and why they caused an impact*
    - Identify any pertinent codes or criteria and provide their threshold values. *Note: these are criteria for significance given in the CEQR sections for your attribute called "Determining impact significance" and "Regulations"*
  - References: List all the sources used in the above sections and cite them correctly
- Submit this: All post electronic copy to group folder on Blackboard (filename: IW1 - yourname)

Group work assignment #1 (P-GW1)

- Hold group meeting in person
- Address these topics (at minimum): Exchange contact information. Identify roles for this meeting (project manager, facilitator, note taker, and time keeper). Acting in roles, review everyone's IW1, identify date and agenda (including points for GW2) and decide roles for 2nd meeting.
- Submit this: Current note taker post 1st meeting minutes (filename: M1 minutes - yourname) and 2nd meeting agenda (filename: M2 agenda - yourname) to group folder on Blackboard

Individual work assignment #2 (P-IW2)

- Complete these sections of the project
  - Methods and procedure (experimental): *Note: You can find most of this information in the "Assessment methods" section of CEQR*
    - If you developed an experimental procedure, detail it in order and in enough detail (how, when, where, and to what extent) that someone could reproduce your results if they followed your procedure. If your procedure was given to you, describe its general approach and refer to the detailed procedure (and include detailed approach in appendix). Clearly state whether the experimental procedure was strictly followed and, if not, how

it deviated. *Note: base this on the CEQR "Assessment methods" section, identifying which subchapters are relevant and which are not, and retaining the section numbering (e.g., "300. Assessment methods")*

- Specify the equipment you will use and the data (and how much of it) you will collect. *Note: identify all data identified in CEQR that is pertinent to the project and your attribute that you will need to collect, and explain how much you need, where, etc. and prepare tables that you will fill out during collection to organize your raw data*

- References: List all the sources used in the above sections and cite them correctly

- Submit this: <u>All</u> post electronic copy to group folder on Blackboard (filename: IW2 - yourname)

Group work assignment #2 (P-GW2)

- Hold group meeting in person
- Address these topics (at minimum): Acting in new roles, review everyone's IW2, identify questions to ask in class, refine data collection sheet, identify date of data collection, identify date and agenda (including points for GW3) and decide roles for 3rd meeting. *Note: <u>everyone</u> must be involved in data collection*
- Submit this: 1. <u>Current project manager</u> post data collection sheet with memo identifying when and where data collection will be done and by who to group folder on Blackboard (name: blank datasheet - yourname). 2. <u>Current note taker</u> post 2nd meeting minutes (filename: M2 minutes – yourname) and 3rd meeting agenda (filename: M3 agenda – yourname) to group folder on Blackboard.

Individual work assignment #3 (P-IW3)

- Complete these sections of the project
  - Methods and procedure (for the analysis of the data collected to reveal baseline and impacted conditions): *You can find most of this information in the "Analysis", "Assess Significance", and "Develop mitigation" sections of CEQR*
    - Explain the analysis procedure in detail. State and justify any assumptions you will make, identify all sources of information (what is your data vs. data from the literature), and present the equations that will be used to process the raw data to meet your objectives, using consistent names for parameters that show up in multiple equations, defining each term in the equation and giving its units. *Note: In this assignment, you are only DESCRIBING the steps … not doing them!! Break the steps described in the Analysis", "Assess Significance", and "Develop mitigation" sections of CEQR into smaller steps, retaining the section numbering in CEQR, and not skipping any steps (if a step doesn't pertain to your project, identify it and explain why it is not relevant).*
  - References: List all the sources used in the above sections and cite them correctly
- Submit this: <u>All</u> post electronic copy to group folder on Blackboard (filename: IW3 - yourname)

Anonymous online survey #1 (P-survey1)

- Complete the survey online *Note: Please be as complete and honest as possible, and practice your effective communication skills to give clear and constructive feedback that makes others want to improve their team skills*
- Submit this: <u>All</u> respond to the email request and complete the online survey

Group work assignment #3 (P-GW3)

- Hold group meeting in person
- Address these topics (at minimum): Acting in new roles, review data that was collected, review IW3, identify questions to ask in class, determine who will do what for the analysis (analysis, assess significance, identify mitigation), identify date and agenda (including points for GW4) and decide roles for 4th meeting. *Note: the CEQR "Analysis" section should be broken into 3 sections, to be completed by one person each. Assess significance and identify mitigation should be completed by 1 person.*
- Submit this: 1. Current project manager post scanned copy of raw data with memo identifying when and where data collection was done and by who to group folder on Blackboard (name: completed datasheet - yourname). 2. Current note taker post 3rd meeting minutes (filename: M3 minutes – yourname) and 4th meeting agenda (filename: M4 agenda – yourname) to group folder on Blackboard.

Individual work assignment #4 (P-IW4)

- Review the results of the first online survey and comment on areas in which you would like to improve your performance
- Refine your portions of these sections of the project
  - Methods and procedure (experimental and analysis): Refine these sections
- Complete this section of the project just for your portion of the methods and materials
  - Results and discussion: *Follow your refined methods and materials section, to complete your section of the analysis, assess significance and develop mitigation only …*
    - Referring to equation numbers already presented, do an example calculation that begins with raw data and shows the full analysis to the desired parameter.
    - Present all results (including the example result) in summary form in tables and graphs that are numbered with appropriate titles, and explain what you want the reader to see in the results.
    - State all results explicitly in verbal form, explaining whether they make sense and discussing special features of the results to demonstrate you understand the significance of your results
    - Identify any concerns with the procedure
    - Identify possible sources of error, estimate the magnitude of the error, and explain how the error will affect your main conclusions
    - Comment on how your results compared to the literature or to acceptable recommended values presented in codes
    - Reference and cite all sources in the proper format
  - References: List all the sources used in the above sections and cite them correctly
- Submit this: post electronic copy to group folder on Blackboard (filename: IW4 - yourname)

Group work assignment #4 (P-GW4)

- Hold group meeting in person
- Address these topics (at minimum): Acting in new roles, review IW4 of each person in group, identify things still to be done or improved, identify questions to

ask other groups and Prof Krakauer in class, determine whether group should meet again. Elect final project manager.
- Submit this: Current note taker post 4th meeting minutes (filename: M4 minutes – yourname)

Individual work assignment #5 (P-IW5)
- Refine your portions of these sections of the project: methods and procedure, results and discussion
- Develop 2 Powerpoint slides on your portions of the project. *Note: one should describe your refined methods and materials section, and one should describe your results and discussion section*
- Submit this: A copy of your assignment to group folder on Blackboard (filename: IW5 - yourname)

Group work assignment #5 (P-GW5)
- Continue work on your project
- (optional) Hold group meeting in person *Note: Maybe use time to give each other feedback!*
- Submit this: 1. Final project manager post DRAFT group project with checklist to group folder on Blackboard (filename: DRAFT – yourname). 2. Final project manager give hardcopy of DRAFT group project with checklist to Prof. Krakauer. *Note: all sections of the report should be in ONE file.*

Group work assignment #6 (P-GW6)
- Continue work on your project
- (optional) Hold group meeting in person *Note: Maybe use time to practice your presentation!*
- Submit this: 1. Final project manager post checklist and FINAL group project to group folder on Blackboard (filename: FINAL – yourname). 2. Final project manager give hardcopy of checklist and FINAL group project to Prof. Krakauer. *Note: all sections of the report should be in ONE file.*

In-class presentations
- Attend class on time
- During each presentation given by another group, prepare at least one question for the other group, and rotate who in your group asks the question
- Present a section of your report *Note: Everyone must present!*

Anonymous online survey #2 (P-survey2)
- Complete the survey online *Note: Please be as complete and honest as possible, and practice your effective communication skills to give clear and constructive feedback that makes others want to improve their team skills*
- Submit this: All respond to the email request and complete the online survey

ANONYMOUS ADVICE FROM STUDENTS FROM LAST YEAR

“Get to know group members' strengths and weaknesses in the beginning.”
“Have at least one team meeting every two weeks. It will help brainstorming.”
“Make sure that you have a hands-on attitude to the project. Be proactive about ideas.”
“Set up a rigid schedule for the team on meetings, and portions of the project to be done.”
“Take the initiative to have more group meetings. It helps to understand the assignment.”

COMMENTS FROM AN OUTSIDE PRACTICING ENGINEER

“It's very realistic how this one study is broken down into groups that address different aspects of an environmental impact study. Seeming not to have enough data to start off with is also a very realistic problem and I think a project such as this CCNY project is interesting because a lot of the information that is required for an EIS as this has not yet been addressed in readily available and published reports online.

In terms of career preparation, I think the information in an EIS is generally applicable to all of the concentrations within civil engineering. For students in the structures concentration, I think it is useful to know about the environmental impacts during construction. At work, a lot of the communication between my office and the structural engineers during construction that is applicable to environmental impacts are either due to dust control or due to construction dewatering and how to manage the discharge.”

-- Mr. Gary Chan, Langan Engineering and Environmental Services, New York

DRAFT PROJECT CHECKLIST

Both of these deliverables are due at the same time. If either one of them is late, the whole project is considered late.

☐ 1. Submit hardcopy of written report – must contain all sections below:

- ☐ Transmittal page
- ☐ Table of contents
- ☐ Abstract
- ☐ Objective
- ☐ Introduction
- ☐ Methods and Materials
- ☐ Results and Discussion
- ☐ Conclusions
- ☐ References (follow Wittig textbook Ch2)
- ☐ Appendices (include raw data as written in the field, supporting calculations, all four meeting agendas and minutes)

☐ 2. Submit hardcopy of oral report printed as "handouts"[2] – must contain all sections below:

- ☐ Outline
- ☐ Objective
- ☐ Introduction
- ☐ Methods and Materials
- ☐ Results and Discussion
- ☐ Conclusions

☐ 3. Post electronic copy of written project (in ONE .doc or .docx file containing all sections given above) to group folder on Blackboard on time

☐ 4. Post electronic copy of oral project (in ONE .ppt or .pptx file containing all sections given above) to group folder on Blackboard on time

[2] To print Powerpoint handouts, select Print, and at bottom of box enter these quantities and then select okay: Print what = handouts, Color = grayscale, Handouts slides per page = 2

FINAL PROJECT CHECKLIST

All four of these deliverables are due at the same time. If any one of them is late, the final project will be considered to be late.

☐ 1. Submit hardcopy of written report – must contain all sections below:

- ☐ Transmittal page
- ☐ Table of contents
- ☐ Abstract
- ☐ Objective
- ☐ Introduction
- ☐ Methods and Materials
- ☐ Results and Discussion
- ☐ Conclusions
- ☐ References (follow Wittig textbook Ch2)
- ☐ Appendices (include raw data as written in the field, supporting calculations, all four meeting agendas and minutes)

☐ 2. Submit hardcopy of oral report printed as "handouts" – must contain all sections below:

- ☐ Outline
- ☐ Objective
- ☐ Introduction
- ☐ Methods and Materials
- ☐ Results and Discussion
- ☐ Conclusions

☐ 3. Post electronic copy of written project (in ONE .doc or .docx file containing all sections given above) to group folder on Blackboard on time

☐ 4. Post electronic copy of oral project (in ONE .ppt or .pptx file containing all sections given above) to group folder on Blackboard on time

Due dates

Feb 6: IW1
Feb 20: GW1
Feb 27: IW2
Mar 6: GW2
Mar 13: IW3, Survey1
Mar 20: GW3
Apr 3: IW4
Apr 10: IW5, GW4
Apr 24: GW5 (project draft)
May 13: GW6 (project final)
May 15: Survey2