



UCC 501 – SUSTAINABLE ENERGY – Fall 2014

Term Project Description

Release Date: 15 / September

Submission Date: **15 / December**

Topic: Your Choice

Type: 4 person teams

Learning Outcomes: Deepening of your individual understanding on a specific topic of sustainable energy. Communicate your findings effectively both orally and in writing. Reinforce the ability to collaborate in a team setting.

You are requested to write a term paper analyzing a topic related to energy.

Term Paper Guidelines

Rule #1 for these papers is *quality over quantity*. Take the space you need to say what you need to make your argument.

Formatting guidelines

- About 20-40 pages, including figures and references
- A space and a half between lines
- 12-point type. 1-inch margins
- You may want to format it for a formal journal paper submission

Team Selection

- Teams will be formed on your own initiative. However, you will need to have at least 3 programs represented in your team (i.e. 4 ESM students cannot be in a team together). This will allow for a better skill set combination and most probably a better paper in the end
- Task delegation is entirely up to the team!
- All members of the team will be equally graded at the end with the exception of their oral presentation performance

Topic Selection

Please choose 2 or 3 topics that are of interest to your team for a term paper and rank them by preference. Use the Project Submission form on Moodle to propose your team members and project topics.

TOPIC AND TEAM SELECTION DEADLINE:

Thursday 02/10

TOPIC SELECTION

Your team will submit the topics of interest and the final topic will be assigned according to the following criteria:

- You will be given your first preference unless another team has a very similar topic or we think that a lower ranking topic is in fact much more interesting
- You may pick a topic that you are working on or have worked on as a project already but it would be better if you look into something outside of your main expertise
- For ideas of possible topics and papers, please see below

All teams should arrange a meeting with the instructor for a brief consultation on the topic. Usually 10 min should be enough.

ORAL PRESENTATIONS

You will be requested to present your main findings in a 15-minute presentation plus 5 minutes Q&A on the week of finals. All students are required to be present in the presentations.

FINAL TERM PAPER DEADLINE

All final papers will be submitted by **Monday December 15th.** This is critical to ensure a timely response on the grades.

Possible Topic Selection

Each paper is expected to review the state of the art on the topic and do some independent analysis and assessment that adds insight to the topic at hand. The topics and the discussion in the paper need to relate back to the concepts taught in class particularly Energy & Sustainability, but this can cover a very broad area as you have already realized.

Possible topic areas include but are not limited:

- Regional energy options (potential, scale, sustainability, economics...)
- Comparisons of conventional and unconventional fossil with renewable energy alternatives
- Energy efficiency and demand management options (including regulatory impacts)
- Nuclear energy potential and problems
- Green buildings and sustainable architecture (zero carbon principles, sustainable design, etc.)
- Large-scale energy system feedbacks (2nd order interactions with climate change, water usage, etc.)
- Sustainable transport (electrification potential, aviation)

- Industrial energy uses and efficiencies

WRITING GUIDELINES

Good writing complying with academic standards will be an important evaluation criterion. If you need to refresh proper grammar/syntax academic referencing, you can look into a helpful and well accepted reference resource:

<http://www.mhhe.com/mayfieldpub/tsw/toc.htm>

TERM PROJECT PAPER EVALUATION CRITERIA

The project reports should contain the following sections:

- Title
- Abstract
- Introduction / Background
- Literature Review
- Theory / Methodology
- Results
- Discussion
- Conclusion / Recommendations
- References and notes

These sections are not mandatory, but serve as a reference of how you should structure your papers.

Projects will be evaluated on the following criteria:

Style and writing

Use academic/formal report type of writing. You are strongly urged to write concisely, coherently and to the point, i.e., in good academic writing style. Avoid confusing long sentences, bad grammar and syntax. A paper that is badly written is very hard to be evaluated on its other merits.

Sourcing

The importance of literature search/review for this paper cannot be stressed enough.

Make sure that you perform a wide sweep and deep search of the relevant academic research literature to your topic. Demonstrate that you have done this by summarizing/referencing your sources to show how others have thought about this before you.

Contribution: comparison, argumentation, novelty

How is your paper contributing to the general knowledge? Are you comparing existing positions and making recommendations? Are you doing new calculations for drawing your conclusions? Have you done novel thinking about a problem? (Note: novel thinking is not necessarily new research – simply a fresh approach).

Avoid general declarations (e.g., climate change is bad we need sustainability ...). Stay on your topic as much as possible – we all have established the general background.

Demonstrate how you use the knowledge gained from the course to apply it on your topic.

TERM PROJECT PRESENTATION EVALUATION CRITERIA

Presentation style

Show that you have worked on the presentation and not that you put it together 10 minutes before.

Presentation effectiveness

Decide which of your contributions and arguments are most important. Tease the audience to search out for your written work to learn more. You cannot present everything in 15 minutes, so choose wisely.

Try to tell a convincing story

In a presentation, it's all about how you tell the story of the work you have done.