In NPRE 412, a large part of your grade is earned with reading a compelling book about nuclear power, the nuclear fuel cycle, energy economics, or energy ethics. Reading, considering, and reporting on this reading is intended to build your technical writing skills, tie together the lessons of the course, and hone your existing critical thinking skills.

# 1 Report

In a signficant, sophisticated document, describe the content of the book and critically evaluate it. Consider the framing of topics, the approach to facts, the approach to emotions, and the purpose and audience of the book. Identify key lessons you learned from reading it.

## 1.1 Abstract

In a paragraph, summarize your report. This is best written last, as it covers the following sections in brief.

## 1.2 Summary

The report should begin with a summary of the book. Describe the narrative arc of the book, describe the main ideas and topics discussed in the book, and note the structure of the book. Provide an idea of the full scope of the content in the book. Your book report should have at least the following sections.

## 1.3 Author and Audience

Comment on the author's background and viewpoint on the topic as well as the target audience. Consider questions including, but not limited to:

- Is the author qualified to write the book?
- Why did the author choose to write about this topic?
- What was the main point (or points) that the author was trying to get across?
- How can you tell what audience the author is writing for?
- What did book reviewers think of this book online (e.g. on Amazon, Goodreads)
- What did the media think of this book (e.g. Does it appear in the New York Times Book Review)?

## 1.4 Critical Technical Evaluation

Comment on the technical content of the book and the book's approach to communicating it. Consider questions including, but not limited to:

- Did the author present accurate information?
- Can the information in the book be verified?
- Was the technical information presented thoroughly, or were important details left out?
- Was the techical information easy to understand?
- Did the author convince you of their views, or were there things you remain skeptical or critical of?

### 1.5 Critical Non-technical Evaluation

Comment on the non-technical content of the book and the book's approach to communicating it. This may include historic facts of a non-technical nature, personal naratives, and appeals to emotion. Consider questions including, but not limited to:

- Did the author present accurate information?
- Can the information in the book be verified?
- Was the non-technical information presented thoroughly, or were important details left out?
- Was the non-techical information easy to understand?
- What emotions did you feel while reading the book?
- What emotions did the author likely intend to stir in the reader?
- Did the author convince you of their views, or were there things you remain skeptical or critical of?

### 1.6 Conclusion

Books can be long, dense, short, light, repetitive, frustrating, or illuminating. Give your general thoughts on the book.

- How did your knowledge and opinions frame your reaction to the book?
- Were any of your assumptions or deeply held opinions challenged during the reading of the book?
- What was your overall opinion of the book?
- Would you recommend it to others?

### 1.7 References

Include a bibliography. Your report should cite, at the very least, the book itself. Ideally, your previous sections might also reference related literature, primary sources, media, and other content that should appear in the bibliography, here.

## 2 Presentation

Prepare a presentation and submit it in PDF format to Canvas at leas 2 hours before the scheduled time for the final exam.
On the final exam day, please be prepared to present the content of this book report in a very short presentation (5 minutes, depending on scheduling).
You will be judged on your presentation style as well as ability to communicate the content of this report quickly.

## 3 Report Formatting

### 3.1 General

Please write a comprehensive, self-contained report.

- It must be computer generated, not hand written **[-5%]**.
- PDF must be submitted to Canvas by the due date **[-5%]**.

### 3.2 Content Formatting

- Write this report like a narrative, with sections.
- Report should be self-contained, do not repeat assignment text, do not copy/paste the assignment itself **[-5%]**.
- Do not submit results as raw "column of numbers" data **[-5%]**.
- Do not include your source code in the report **[-5%]**.
- Snippets (small parts) of the source code are OK, if relevant. Consider using the LaTeX`minted` package for syntax highlighting, if you're using LaTeX.
- Do not include commands typed in the prompt (Matlab, shell, compiler, etc) **[-5%]**.
- Do not include extra plots/figures **[-5%]**.
- Additional figures that support the requested results are OK.
- Report length should be less than 10 pages, if you exceed 10 pages, you are probably doing something wrong, for example:
  - 1-3 pages for part 1 problem description, equations, derivation of solutions
  - 1-3 pages for part 2 problem description, results, discussion
  - 1-3 pages for part 3 problem description, results, discussion
- Obviously wrong solution **[-5%]**.
- Include well-formatted references **[-5%]**

### 3.3 Formatting

- Cover page with your name, assignment title/number, course number, date **[-5%]**.
- Include page numbers, except on the title/cover page **[-5%]**.
- Report body has to start on page 1 **[-5%]**.
- Use portrait orientation **[-5%]**.
- Landscape for a single page with large table/figure is OK.
- Plots, figures, and their labels must be formatted to be visible, readable and differentiable on the printout **[-5%]**.
- Use only one font type and size for the main body of the report **[-5%]**.
- Do not use monospaced font for the report body **[-5%]**.

### 3.4 Equations

Your book report might not include equations. But, perhaps it will.

- Number each equation in a consistent way **[-5%]**.
- Equations should be numbered to the right of the equation **[-5%]**.
- Use notation consistent with the class lectures or textbook **[-5%]**.
- Typeset equations properly (e.g. Equation Editor, LaTeX, MathType, etc.), do not type them as unformatted text or inject them as grainy images. **[-5%]**.

# 4 Tables and Figures

- Number and label each table and figure in a consistent way **[-5%]**.
- All figures should be captioned and should be referenced in the text.
- Use proper labels for plots, figures, tables – title, axis, legend, units, etc. **[-5%]**.
- Table title should be above the table, figure title should be below the figure **[-5%]**.
- Titles, legends, labels must be of sufficient size and quality to be easily readable **[-5%]**.
- Make units (e.g. time) on plots/figures understandable to humans **[-5%]**, for example:
  - if scale exceeds 100s of sec, change to min
  - if scale exceeds 100s of min, change to hours
  - if scale exceeds 100s of hours, change to days, etc...
  - If solution behavior is not visible on the plot because of the scale, make another plot with a different scale (or log scale) that clearly shows the solution behavior **[-5%]**.
- Use sufficiently high quality figures such that they look smooth and sharp **[-5%]**.
  - Screen shots are probably too low quality.
  - `jpeg` and other lossy compression types are probably too low quality.
  - High resolution and lossless vectorized image types are recommended.

# 5 Other

The purpose of the assignment is a comprehensive, self-contained, consistently formatted report and a demonstration that you read and critically contemplated the book assigned to you. If you are not sure about what and how much to include in the report, imagine that you have to grade it - make it concise and easy to follow. I'm being picky because I want you to write good reports. The content and formatting rules are *almost* universal.