

Capstone Problem Deliverables

A full submission will be a written report. The document should be written as an engineer making a report and recommendation to a client.

The body of the report must be suitable for reproduction, that is, computer-generated and in PDF format.

The report must contain the following deliverables, organized and ordered as follows:

1. Letter of Transmittal.
2. Cover Page, including the title “Technical and Economic Proposal” and the specific title of your project.
3. Executive Summary (500-600 words).
4. Table of Contents.
5. Table of Figures.
6. Table of Tables.
7. Brief Design Description (500-600 words).
8. Process Details.
 - a. Process flow diagram (PFD) for process and utilities areas.
 - b. Material balance for major streams including mass rate, composition, and key thermal properties.
 - c. Sized equipment list (See DP4 for an example).
9. Economics.
 - a. Capital cost estimate.
 - b. Variable Cost estimate.
 - c. Fixed Cost estimate
10. Process Safety.
 - a. Minimizing Environmental Impacts.
 - b. P&ID with controls and alarms.
 - c. Pressure relief valve sizing.
 - d. Failure rate analysis.
 - e. Personnel exposure risk.
 - f. Atmospheric detonation of distillation inventory.
 - g. Hazard and Operability Study (HAZOP) of the largest distillation column.
11. Conclusions.
12. Appendices.
13. Additional descriptions of these sections and how to construct them can be found in Chapter 11 of Peters, Timmerhaus, and West.
14. Final submission must be in electronic format (PDF and MS-Word). The full report must be 50 pages or less, including all text, appendices, and graphics.