

CHEME 485: FINAL REPORT EVALUATION

Section:

Team:

Writer:

Grade:

DATE:

GRADER:

Process

| | | | |
|-------------------------------|--|--|-----------|
| Design | <ul style="list-style-type: none"> • Does the design meet the given design specifications? • Does the design include all important sections (feed preparation, reaction, separations, recycle, environmental controls, etc)? | | 10 |
| PFD | <ul style="list-style-type: none"> • Is the PFD included? Is it complete? Is there a stream table that is complete and well-formatted? • Does the PFD include controls and important process conditions? • Does the design include utilities? | | 25 |
| Design and Process Conditions | <ul style="list-style-type: none"> • Is there an equipment table included? When I check design heuristics, do they roughly correspond to those presented in equipment table? When there are deviations from common heuristics, are these justified? • What key variables need to be optimized? Were these carried out in a systematic fashion? | | 15 |
| | | | |
| Subtotal | | | 50 |

Simulation

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|----------------|---|--|----|
| Thermodynamics | <ul style="list-style-type: none"> • Which thermodynamics package was selected? Was it justified? Are there any concerns about the chosen thermodynamics package? • Were there any chemicals used in the simulation that didn't have properties available in any defaults databases? How were these properties found? • Were reaction rates specified for reactions and backed up with literature? | | 20 |
| Simulation | <ul style="list-style-type: none"> • Does the simulation converge? • Were there any "cheat"s introduced in order to achieve convergence? Were these explained and justified? • Do the simulation results match those shown in the PFD? | | 25 |

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| | <ul style="list-style-type: none"> • Were there any non-traditional elements in the simulation e.g. solids handling or batch processing? How were these handled? | | |
| Subtotal | | | 45 |

Economics

| | | | |
|------------------------|---|--|-----------|
| Capital Costs | <ul style="list-style-type: none"> • Are capital costs complete? Is the CAPCOST sheet included? • Are there any obvious errors? • When I spot check capital costs calculations, are they accurate? | | 15 |
| Manufacturing Costs | <ul style="list-style-type: none"> • Are manufacturing costs complete? Are the manufacturing cost calculations included and well-annotated? • Are there any obvious errors? • How are raw materials and product costs evaluated? | | 10 |
| Profitability Analysis | <ul style="list-style-type: none"> • What metrics were used to evaluate profitability? Are calculations included? | | 10 |
| Sensitivity Analysis | <ul style="list-style-type: none"> • Was a sensitivity analysis included? Are margins of error discussed and justified? Which variables introduce the most uncertainty? Are the risks in this investment discussed and justified? | | 10 |
| Subtotal | | | 45 |

Safety, Ethics, and the Environment

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|-------------|---|--|-----------|
| Safety | <ul style="list-style-type: none"> • Was safety evaluated in a systematic fashion? Was the method specified? Is safety discussed throughout the report as a key variable? Is an in-depth safety evaluation included? | | 15 |
| Environment | <ul style="list-style-type: none"> • Are environmental constraints built into the design process? Are key regulations included and cited throughout? | | 15 |
| Subtotal | | | 30 |

Technical Writing Skills

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|------------------|--|--|----|
| Organization | <ul style="list-style-type: none"> • Does the final project contain all relevant sections? • Are all sections complete and well thought-out? | | 15 |
| Use of technical | <ul style="list-style-type: none"> • Is the paper free of grammatical and spelling | | 10 |

| | | | |
|--------------------------------------|---|--|------------|
| language and correct use of language | errors? <ul style="list-style-type: none"> • Is it clear that the paper was proofread prior to submission? | | |
| References | <ul style="list-style-type: none"> • Were there an adequate number of references? • Are references cited throughout, particularly in the introductory material? • Are references from credible sources, and can these be verified by the grader? | | 5 |
| | | | |
| Subtotal | | | 30 |
| | | | |
| Total | | | 200 |