

Team Project #1 – Grading Rubric

Outcomes associated with this report:

- 1c: Apply knowledge of chemical engineering unit operations.
 - Demonstrate understanding via a description and diagram of a production process.
- 1b: Apply knowledge of chemical engineering fundamentals.
 - Identify significant kinetic and potential energy changes in a process, as well as significant changes in internal energy and enthalpy due to temperature change, pressure change, phase change, mixing, or chemical reaction.
- 2a: Participate effectively in a team.
 - Work as a team to prepare a report that reads as a unified document.
- 2b: Communicate in written and graphical form.
 - Adequately organize and present information for easy understanding.
 - Produce written work that is professional in tone and uses standard written English.
 - Follow the Guidelines for Technical Writing.
 - Use meaningful and concise figures and tables to convey information.
- 1f: Consider economics, safety, and environmental concerns. 1b: Articulate the interaction between engineering solutions and contemporary issues. 1c: Engage in lifelong learning by learning independently.
 - Research "market information" about a process using resources outside the textbook.
 - Research "production information" about a process using resources outside the textbook.
 - Research "safety and environmental information" about process using resources outside the textbook.

Team Members:

Overall Report	
Production Information	
Market Information	
Safety and Environmental Information	
Grade	

Overall Report

A	<p>Everything in “C” is true, and so are all of the following: The writing style is exceptionally good. Conventions such as parallel construction consistently observed. No “empty” words such as “very” or “really”. Professional tone never breaks. Typographical, grammatical, and spelling errors almost non-existent. Format of figures, tables absolutely correct. Figure captions meaningful, not restatements of the plot axes. No contradictory statements. No unreferenced information. Organization flawless.</p>
B	
C	<p>All of the following are true:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Overall impression is of neatness, organization, and professionalism. <input type="checkbox"/> Overall impression is of logical organization. Divided into sections with appropriate information in each. <input type="checkbox"/> Appears to be one document, not multiple documents stapled together. <input type="checkbox"/> Typographical, grammatical, and spelling errors number about one per page or fewer. <input type="checkbox"/> Tone is generally professional, similar to that of articles in C&E News, for example. <input type="checkbox"/> Produced with a word processor. <input type="checkbox"/> Information is compiled from a variety of sources. The majority of sources are under some control via independent editorial staff or peer review or government agency review. A report compiled exclusively from company literature and/or “watchdog group” literature is not acceptable. <input type="checkbox"/> Information is reported in the students’ own words, not plagiarized or given as a series of quotes. <input type="checkbox"/> Referencing & citations make the source of information obvious and would allow reader to easily locate the original source. <input type="checkbox"/> Figures and tables clarify the discussion and are easy to understand. <input type="checkbox"/> Each table is numbered, appears in order, has a meaningful title, is discussed and cited in the text, and includes entries with appropriate significant figures and formatting. <input type="checkbox"/> Each figure is numbered, appears in order, has a meaningful caption (not title), is discussed and cited in the text, and has appropriate axis scales and labeling.
D	
F	<p>Any of the following are true:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Any three of the characteristics of a “C” are not present. <input type="checkbox"/> Significant portions of the text appear to have been plagiarized. <input type="checkbox"/> The vast majority of the information sources are under no control via independent editorial staff or peer review.

Comments:

Production Information

A	<p>Everything in “C” is true, and so are all of the following. The schematic is very neat and easy to follow, with clear symbols and well-labeled streams and unit operations. The information presented has been compiled from several sources and interwoven seamlessly; there is no break between information from one source and another. There are no technical errors or contradictory statements. There are two or three examples of interesting, pertinent information beyond the minimum requirements.</p>
B	
C	<p>All of the following are true.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Raw materials correctly identified. <input type="checkbox"/> Form(s) of product shipped to users correctly identified. <input type="checkbox"/> Chemical and physical transformations are correctly described. <input type="checkbox"/> Schematic of production process drawn neatly and matches discussion. <input type="checkbox"/> Description of process would allow one to sketch the process. <input type="checkbox"/> Description indicates purpose of unit operations and why they are linked as they are, describes how process works. <input type="checkbox"/> Role of energy in the process discussed, with major and minor transformations identified, and no major energy transformations omitted. <input type="checkbox"/> Process description and energy discussion show evidence of thinking by the students, not just reporting information from other sources. <input type="checkbox"/> Discussion of role of energy is specific to the process, and explains where and how energy is required or removed during the production.
D	
F	<p>Any of the following are true.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Any two characteristics of a “C” not present. <input type="checkbox"/> Significant portions of the text appear to be plagiarized. <input type="checkbox"/> The schematic is a photocopy or other exact reproduction of published material. <input type="checkbox"/> Sources for information are not clearly indicated. <input type="checkbox"/> There are several major technical errors.

Comments:

Market Information

A	<p>Everything in “C” is true, and so are all of the following. Includes enough historical data to show trends in pricing and/or production. Team has integrated information from multiple sources and developed their own interpretation, rather than reproducing interpretations from the individual sources. There are no technical errors or contradictory statements. There are two or three examples of interesting, pertinent information beyond the minimum requirements.</p>
C	<p>All of the following are true:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Reports current and at least one “historical” price for product(s) and major raw materials. <input type="checkbox"/> Factors affecting price discussed. <input type="checkbox"/> Reports current and at least one “historical” value for production. <input type="checkbox"/> Factors affecting demand discussed. <input type="checkbox"/> Major markets for product identified (by industry and geography). <input type="checkbox"/> Major producers of product identified (by name).
F	<p>Any of the following are true.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Any two characteristics of a “C” not present. <input type="checkbox"/> Significant portions of the text appear to be plagiarized. <input type="checkbox"/> Sources for information are not clearly indicated. <input type="checkbox"/> There are several technical errors. <input type="checkbox"/> It appears that information was “made up”.

Comments:

Safety and Environmental Information

A	<p>Everything in “C” is true, and so are all of the following. Conflicting information from different sources is highlighted. Discussion shows clear evidence of thinking and interpretation by the team, not just reporting of information from sources. There are two or three examples of interesting, pertinent information beyond the minimum requirements.</p>
C	<p>All of the following are true.</p> <ul style="list-style-type: none"> <input type="checkbox"/> All major hazards associated with raw materials and product identified. <input type="checkbox"/> Waste generated by production and disposal methods identified. <input type="checkbox"/> At least two environmental concerns applicable to the raw materials, products, or byproducts of this process are discussed and referenced. The references are U.S. or state E.P.A. regulations or documents. <input type="checkbox"/> At least two safety concerns regarding raw materials, products, or byproducts of this process are discussed and referenced. The references are MSDSs and/or OSHA regulations or guidelines. <input type="checkbox"/> At least one potential public concern regarding raw materials, products or byproducts of this process or regarding the process itself is discussed and referenced. The references may be publications of “watchdog” groups, articles in the popular literature (newspapers, newsmagazines), or articles in the professional literature (C&E News, Chemical & Engineering Progress, etc.). <input type="checkbox"/> Examples of how process design or operation is determined by safety or environmental concerns are given.
F	<p>Any of the following are true.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Any two characteristics of a “C” not present. <input type="checkbox"/> Significant portions of the text appear to be plagiarized. <input type="checkbox"/> Sources for information are not clearly indicated. <input type="checkbox"/> There are several technical errors. <input type="checkbox"/> It appears that information was “made up”.

Comments: