

YouTube problem creation 2021

Overview: Videos related to chemical engineering as well as material and energy balances are used in class and actions in the videos are reverse engineered. The objective of this assignment is to write a homework-style material balance problem based on and inspired by part or all of a video. Many great examples were added as Chapter 11 in the MEB zyBook in 2021.

Assignment: Be creative in choosing a video and writing the problem. To receive full credit, the video should not repeat posted videos. A list of videos is compiled on a YouTube channel: <https://www.utoledo.edu/engineering/chemical-engineering/liberatore/youtube.html>

Based on and inspired by part or all of a video, write a material balance problem that could be assigned as a homework problem for the MEB course. In the problem statement, clearly indicate any values estimated from the video. In addition, include a 100 to 150 word summary of the course concepts addressed by the video/problem. Including a schematic, drawing, or figure with the solution is encouraged. Also, listing assumptions should be included for most problems. An example of the three-page format is attached.

The problem should align with 1 of 4 chapters in the MEB zyBook:

1. TYPE=UNITS. Chapter 1. Combine concepts from at least 3 sections.
2. TYPE=MULTI. Chapter 2. Should include at least 2 process units and 4 streams.
3. TYPE=PHASE. Chapter 4. Combine concepts from at least 3 sections.
4. TYPE=TRANSIENT. Chapter 8. Should involve integration.

Deliverables: The project should be typed and formatted professionally. A 3-page template for your summary, problem, and solution is provided. Submit a single .docx file.

LastName_YTF2021_TYPE_One word title (e.g., Liberatore_YTF2021_RXN_Octane.docx).

Grading: Grading criteria are in the rubric. HW YouTube will count toward 20 points the overall homework points. You can earn up to 40 points on HW YouTube.

Course =	Material and energy balances	Semester =	Spring 2021
Name(s) =			
Video =			

	A level	B level	Below B level	F level	Comments
Summary communicates effectively the concepts of the problem.	1. Word count 100 to 150 words 2. 3 or more course concepts used 3. How video incorporated into problem	2 of 3 A level criteria satisfied	1 of 3 A level criteria satisfied	Little or no attempt.	
	5	4	3	0	out of 5 points
The video is new or interesting.	1. Less than 5 minutes (can be subsection of longer video) 2. Original 3. Entertaining or exciting	2 of 3 A level criteria satisfied	1 of 3 A level criteria satisfied	Little or no attempt.	Video that are NOT original: Mythbusters, How its made, involving ethanol.
	5	3	1	0	out of 5 points
The video is quantitatively integrated into the problem.	At least one value derived from the video is clearly found in the problem statement.			Little or no attempt.	
	5			0	out of 5 points
Problem statement is complete and difficulty is appropriate.	1. Articulates situation clearly 2. Asks at least 3 questions 3. Difficulty is similar to quiz or exam problems	2 of 3 A level criteria satisfied	1 of 3 A level criteria satisfied	Little or no attempt.	
	10 9	8 7	6 4	0	out of 10 points
Problem solution is complete, correct, and clearly explained.	1. Professionally formatted: Not handwritten. Includes assumptions and citations as appropriate. 2. Includes correct visuals and balances / equations. Calculates final, correct answers with appropriate significant figures 3. Includes written explanations as a guide	2 of 3 A level criteria satisfied	1 of 3 A level criteria satisfied	Little or no attempt.	
	15 14 13	12 11 10	9 7 5	0	out of 15 points

Total score Out of 20 points and up to 40 points