CHEM/ENGR 3810

Chemical Process Principles

Fall 2016 (W – 2:00 to 4:30 pm)

Instructor

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Room: 2136 TLC

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Office Hours

M, T, W, R: 9:00 – 11:00 am

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Textbook

Elementary Principles of Chemical Processes, Richard M. Felder and Ronald W. Rousseau, 3rd Edition, Wiley.

Purpose

An introductory engineering approach to material and energy balance for physical and chemical processes is developed during the semester. Systems of units, material properties, thermo-physical and chemical concepts are discussed. Emphasis is on the application of material and energy balances to steady and unsteady state physical and chemical processes.

Course and Academic Honesty Policies

You will be expected to behave professionally in class and will not be allowed to use cell phones and/or personal computers.

We take academic honesty very seriously. Plagiarism of any sort will not be tolerated. If you plagiarize any part of an assignment for this course, you will receive a zero for the entire assignment, and disciplinary action will be taken. UWG Academic Integrity and Honor Code Pledge is available at http://www.westga.edu/handbook/59.php.

Course outcomes

1) Identify and understand unit operations involved in a process, draw process flowcharts, develop relationships between process variables.
2) Develop linearly independent mass and energy balances, use phase diagrams and extract data for pure compounds and mixtures from tables, charts, graphs or phase diagrams and estimate these through theoretical or empirical equations.
3) Apply the energy balances on steady-state, non-reactive and reactive processes.
4) Solve material and energy balances simultaneously on chemical process systems

Exams and Projects

There will be ***three*** exams and a **final exam**, each worth *70* points for a total of **280 points**. All exams will be in-class, open book and open notes but solutions manual will not be allowed. Two projects will be worth **20 points**. For Project 1, each of you will choose to present an analysis of an engineering failure case. For Project 2, each of you will present a schematic flow diagram of a typical chemical industry, similar to example provided at (http://chemengineering.wikispaces.com/Process+flow+diagrams).

Tentative schedule for exams and projects

EXAM 1	Wednesday, September 7
Project 1	Wednesday, September 28
EXAM 2	Wednesday, October 12
Project 2	Wednesday, October 26
EXAM 3	Wednesday, November 16
FINAL EXAM	Wednesday, December 7 (2 – 4:30 pm)

Grading

The final score will be based on *300* points and the following scale:

> 90 %:A, 80 - 89%:B, 70 - 79%:C, <69%:D