CM2120 – Fundamentals of Chemical Engineering 2

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Office: 202-D Chemical Sciences Building

Course Meeting Times: MWF 3:05 – 3:55 Chemical Sciences Room 102
Open Office Hours

Homework Grader: Ms. Brittany (Britt) Richert, **blricher@mtu.edu**

Required Textbook:
Separation Process Engineering, 2nd Ed., Phillip C. Wankat, Prentice-Hall

List of Course Topics (not all will be covered):

- Chemical Engineering Fundamentals (handouts)
  - Mechanical Energy Balance / Bernoulli Equation
  - Friction Factor
  - Pumps / Compressors
  - Evaporation
- Separations Fundamentals (Wankat text)
  - Flash Distillation (Ch 2)
  - Column Distillation (Ch 3-4)
  - Multicomponent Distillation (Ch 5)
    - Exact / Shortcut Methods (Ch 6-7)
  - Complex Distillation (Ch 8)
  - Batch Distillation (Ch 9)
  - Column Design (Ch 10)
  - Column Economics (Ch 11)
  - Absorption and Stripping (Ch 12)
  - Extraction, Washing, Leaching and Supercritical Extraction (Ch 13)

Class Meeting Policy:
It is highly recommended that you attend class. You should always bring with you the course textbook, engineering problem paper, a ruler, and a sharp pencil.

Evaluation Tools:

Item	*Weight*
Homework (dates below)	25 %
Midterm Exams (dates below)	40 %
Class Attendance and Participation	5 %
Semester Project	10 %
Cumulative Final Exam	20 %

Homework Due Dates:
HW1: 1/21
HW2: 2/4
HW3: 2/11
HW4: 2/25
HW5: 3/4
HW6: 3/27
HW7: 4/3
HW8: 4/22

Exam Dates and Related Homeworks:
Exam 1: 1/26 (HW1)
Exam 2: 2/16 (HW2, HW3)
Exam 3: 3/18 (HW4, HW5)
Exam 4: 4/8 (HW6, HW7)
Final Exam: Cumulative (HW1-8)

Homework policy:

Please turn in your homework the day it is due. If it is late you will lose 10% of the possible points for each day it is late unless you make arrangements in advance.

Please write your homework solutions neatly and clearly on engineering problem paper (sold in the bookstore) starting each new problem on a new piece of paper. Please attach the problem statement to your completed homework. Your answers must be placed in a rectangular box (not circled). You will lose points for lack of neatness and clarity. Pretend you're working for a company and **take pride in your work**. Please see the sample problem for an illustrative example. Neatness and clarity will be part of your homework grade. You may work in your *study groups* on the homework assignment. Please list the team members you worked with on the homework assignment when you turn it in.

Grade changes on homework assignments must be made within one week of your receipt of the graded homework (that's when we inscribe grades onto stone tablets).

Exam policy:

There will be four midterms and a final exam during this course. Please try to take the exam when it is scheduled. If you are ill please get an excuse from a medical doctor. If you live in Hancock and the bridge collapses (or there is an ice storm), don't risk your life trying to get to school. Any time you can't make it, tell me beforehand or call my office at 487-2106 and leave a voice mail message.

If you feel you deserve more points on the exam, please contact me within one week after the return of the exam. At that point, we chisel your scores into the grade book and cannot change them, so please be prompt with your request.

Grading Scale:
A: 100.0% – 93.0%
AB: 92.9% – 87.0%
B: 86.9% – 81.0%
BC: 80.9% –75.0%
C: 74.9% – 70.0%
CD: 69.9% – 65.0%
D: 64.9% – 60.0%
F: 59.9% – 0.0%

Additional Information:

Course Description: Application of mass and energy balances to common chemical engineering operations. Mass balances, energy balances, and fundamental concepts are applied to flow in piping systems, pumps, compressors and stagewise separations (distillation, absorption/desorption, and extraction). Advanced use of Process Flowsheet Simulations Software.

University Policies:

Academic regulations and procedures are governed by University policy. Academic dishonesty cases will be handled in accordance the University's policies.

If you have a disability that could affect your performance in this class or that requires an accommodation under the Americans with Disabilities Act, please see me as soon as possible so that we can make appropriate arrangements. The Affirmative Action Office has asked that you be made aware of the following:

Michigan Tech complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. If you have a disability and need a reasonable accommodation for equal access to education or services at Michigan Tech, please call the Dean of Students Office, at 487-2212. For other concerns about discrimination, you may contact your advisor, department head or the Affirmative Action Office, at 487-3310

Academic Integrity:
http://www.studentaffairs.mtu.edu/dean/judicial/policies/academic_integrity.html

Affirmative Action:
http://www.admin.mtu.edu/aao/

Disability Services:
http://www.admin.mtu.edu/urel/studenthandbook/student_services.html#disability

Equal Opportunity Statement:
http://www.admin.mtu.edu/admin/boc/policy/ch3/ch3p7.htm