

# Ch.E. 433/4 -- Chemical Engineering Lab I & II

2008-09 Course Coordinator: DAVID C. DROWN - OFFICE: BEL 303

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Fall 2008 Experiment Directors : Roger Korus, Wudneh Admassu, Lou Edwards,  
Kinetics, Membrane, Evaporator

Spring 2009 Experiment Directors : David Drown, Eric Aston, Jin Park,  
Heat Exchanger, Distillation, Catalysis

Experiment Facilitator : David MacPherson

**CREDITS :** 1<sub>Fall</sub> + 1<sub>Spring</sub>

**PREREQUISITES :** Ch. E. 330, Ch. E. 341, Ch. E. 423

**CATALOG DESCRIPTION :** Lab experiments in chemical engineering.

**COURSE OBJECTIVES :** { in addition to individual experiment objectives }

- A. Clear, Concise Engineering **C o m m u n i c a t i o n** Skills (Written/Verbal).
- B. Chemical Process **S a f e t y** and Hazardous Operations Analysis.
- C. Chemical Process **T r o u b l e s h o o t i n g**.
- D. **R e v i e w** and Practice of all Chemical Engineering Theoretical Concepts.
- E. Development of Engineering **P r o b l e m S o l v i n g M e t h o d o l o g y**.  
How to form a hypothesis and test it.
- F. **A n a l y s i s** of Data and Interpreting Trends.

**TEXT & REFERENCES :** Every Engineering book you own or that's in the Library

Text books from: ChE 330; ChE 340/1; ChE 423

Drown *Written & Oral Engineering Reports,*  
Fifth Edition, UI Ch.E. Dept., 2003.

Perry & Green *Perry's Chemical Engineers' Handbook,*  
Sixth Edition, McGraw-Hill, 1984. { or other editions }

**MATERIALS :** Safety Glasses { issued August 2008, supply your own if you lose them }

**ORGANIZATION :** Three experimental laboratory projects per semester.

\* **NOTE** \* lab groups will be utilized instead of normal class sessions.

To be scheduled = three hours per group per week experiment operating time

Common briefing, training, pre-lab calibration preparation session prior to each experiment

Course communication = will take place via email, web site, & by appointment with experiment director; occasionally in Ch.E. 453 or Ch.E. 491

**COURSE WEB SITE :**

<http://courseware.egr.uidaho.edu/che/drown/433-01/>

**GRADING CRITERIA :**

Formal Written Report . . . . .	31 %
Executive Summary Written Report . . . . .	31 %
Oral Presentation Report . . . . .	31 %
Participation + Coordinators Evaluation . . . . .	7 % ⇔ { teamwork, safety }

**GRADE :** Curve distribution A, B, C, D at natural breaks at or below 90, 80, 70, 60 % scales.

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Common "Calibration/Training" Session for each experiment :                      Thursday's 2:00 PM

The squad member doing the FORMAL REPORT will be the "Fore person" and must attend the **Common** *briefing, training, &/or pre-lab calibration preparation* session prior to each experiment. Other squad members are welcome to attend, but it is mandatory the designated foreperson attend the specified session. These will take place 2:00 PM Thursday, Sept. 11, for the Kinetics experiment; Thursday, Oct. 9, for the Membrane experiment; and Thursday, Nov. 6, for the Evaporator experiment.

Safety instruction, start-up shake down testing of the operation of each experiment, and training students to operate the equipment should reduce problems and frustrations during the lab runs the following week. Any data measured during these sessions will be shared among all groups and should minimize redundant time spent by each squad calibrating the same instruments. This should allow more time for statistical repeating of experiments and more productive new conditions tests during the lab period.

### Group **CODE of COOPERATION** :

Each group is to prepare and submit a "Code of Cooperation". A complete draft acceptable to all members of the group should be submitted by Tuesday afternoon, 9/2, to the course web site. A final revised group code of conduct is due before September 11, this code should be signed by all group members and each member should retain a copy for reference when evaluating participation of each member at the conclusion of each experiment. If you have any complaints you want to make, or give low performance participation evaluations to your peers, they must be based on items in your groups' code. See Code of Cooperation Memo dated August 25, 2008.

### REMINDER :

ChE 433/4 Policy Memo dated August 25, 2008 applies

Correcting Errors and Assessment of Textbook Extra Credit Memo dated August 25, 2008  
applies [ no student made any comments or suggestions last year, only one the year before ]

- Note that the semester grade will be determined by your ACTUAL PERFORMANCE in this course. It will not be determined by your I.Q., your good intentions, your previous G.P.A., your scores on entrance tests, your good looks, your grade last semester, etc.