

EXECUTING THE ChE 459 DESIGN PROJECT

In an effort to help you organize the work on your design projects, several recommendations have been prepared which, hopefully, you will find beneficial:

- (1) Keep all of the ChE 400 materials in a looseleaf binder for easy access.
- (2) Prepare a looseleaf binder to contain materials relating to your design, including:
 - a. Important references
 - b. Design calculations
 - c. Computer programs and results

Bring the binder to your Tuesday design meeting.

- (3) For the first design meeting in January, be prepared to discuss your findings, thus far, concerning:
 - a. Items under Section 5a, b, d, e, in *Sections of the Report*, Section 15.1
 - b. Promising process flowsheets
 - c. Reaction kinetics and thermophysical property data (Section 2.2)
 - d. Economics, toxicity, and safety data (Sections 1.3, 1.4, and 2.2)

Where you are uncertain or have questions, seek the advice of your faculty advisor and industrial consultants. Note that the sections are in *Process Design Principles* (Seider, Seader, Lewin).

- (4) Learn to use the Towne Library effectively. To help, our librarian, Mary Steiner, has prepared a discussion of the special features of the Towne Library, use of the important indices, computerized data bases, and facilities for interlibrary loans. Plan on attending her talk from 5:00-6:00 p.m. on Tuesday, January 14, in Room 315. See also Section 1.2.
- (5) As your design evolves, individual team members should assume responsibility for aspects of the work. It is important that your group meet from time-to-time during the week to examine each other's work and coordinate the next steps. See Section 15.1 (*Preparation of the Written Report*).
- (6) At most Tuesday meetings, each student in the group should be prepared to discuss aspects of the work for which he or she is responsible. Use the meetings to discuss results and seek advice.
- (7) Between Tuesday design meetings, you can seek help from your advisor, other faculty with specific expertise, the industrial consultants, local industry, etc. Our industrial consultants all have busy schedules. Please contact them only after exhausting other avenues for help. When contacting local industry, be sure they understand that your questions concern your senior design project.

- (8) Most of the synthesis work should be completed by the third week of February. The material and energy balances for the most promising flowsheet(s), that is, base-case designs, should be completed by that time. See Section 2.5.
- (9) Feel free to use Aspen Tech's ASPEN Engineering Suite II (including ASPEN PLUS, SPLIT, ASPEN DYNAMICS, BATCH PLUS, HETRAN, AEROTRAN, and IPE), SUPERPRO DESIGNER, the Nickisch Economics Spreadsheet, VISIO Technical Plus, MATLAB and GAMS. These programs can be accessed from the PC's in the Towne computer labs. Use of the computer is optional throughout the course.
- (10) Your Written Design Report is due on Tuesday, April 8. It should follow the format in Chapter 15 (Seider, Seader, Lewin). The report will be reviewed by your advisor and returned to you with comments before Tuesday, April 18. Note that a lecture has been scheduled on Tuesday, February 18, from 5:00-6:00 p.m., to provide advice in the preparation of the Design Report. All students should plan to attend. Also, the Design Reports will be bound for storage in the Towne Library.
- (11) Oral design presentations will be on April 22. We will have an All-day Technical Meeting involving students, faculty and consultants. A luncheon will be held. The Senior Class Picture will be taken just prior to the luncheon.
- (12) As an option, each design group may prepare a Poster, summarizing the highlights of its design, for display outside of the Chemical Engineering Office. The posters must be completed by Friday, May 2, and deposited in the Chemical Engineering Office.
- (14) The winners of the Melvin C. Molstad Award, for the most outstanding design, will be honored during Commencement Exercises.
- (15) The best designs will compete in the Engineering Alumni Board Competition on Tuesday, April 29.

This year's projects are very promising and, hopefully, will lead to novel and profitable designs. Good Luck!