

CALTECH CHEMICAL ENGINEERING 110ab
WINTER & SPRING 2004
OPTIMAL DESIGN OF CHEMICAL SYSTEMS

Lecture: Thursdays 7:30 - 9:30 P.M. 102 Spalding Laboratory

Instructor: Dr. Eric Wagner, Spalding Room 117
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Teaching Assistant: TBD

Reference Texts: *Unit Operations of Chemical Engineering*,
McCabe et al.

*Plant Design and Economics for Chemical
Engineers*, Peters and Timmerhaus

Topics: Chemical Process Design
Chemical Process Thermodynamics
Chemical Process Kinetics & Reactor Design
Computer Aided Process Design
Heat Exchangers and Heat Transfer Separations

Design Project: Ethylene Plant (Completed in 110b)
Vapor-Liquid Equilibrium
Compression
Absorption
Adsorption
Distillation Design: Short Cut, Rigorous
Refrigeration System
Steam System
NO_x Control
Equipment Sizing
Plant Economics

Assignments: Homework and Project Milestones
Due Fridays 5 P.M.
Late Assignments: -50% Off

Grading: Homework
Project Milestones
Final Exam (110a)
Oral Report (110b)
Final Report (110b)