Department of Chemical Engineering
UNIVERSITY OF ILLINOIS AT CHICAGO

Course Syllabus – ChE 397

Instructor: Dr. G.A. Mansoori, Professor <mansoori@uic.edu>

Senior Design II, ChE 397, is the second of two senior design courses, the first course, ChE 396, does not contain design being its prerequisite. ChE 397 theory, which is covered in ChE 396. Instead, the ChE 397 design experience primarily involves teams of students independently researching and implementing the design of some project with immediate relevance to the chemical process industry. Students meet with their project advisor as individual design teams at least once a week. Classroom time is devoted to team presentations and lectures on professionalism and engineering ethics. Through our Industrial Outreach Program, professional engineers and scientists from nearby industries are brought in as professional project advisors, and to lecture to the class as a whole on design in their respective industries.

Outcome	Level in Course	Comments to Instructor
a. ability to apply math, science & engineering	High	Capstone design course utilizes all components of prior technical training
b. ability to design & conduct experiments and to analyze and interpret data	Moderate	No laboratory component, but review and analysis of literature data
c. ability to design a system, component or process to meet desired needs	High	The precise aim of the course is to design a system, component or process
d. ability to function on multi-disciplinary teams	Low - Moderate	Students may deal with professors and students in other science or engineering departments (most often Chemistry)
e. ability to identify, formulate & solve engineering problems	High	Process modeling is central to the design process.
f. understanding of professional & ethical responsibilities	High	Lectures on engineering ethics are given weekly for the duration of the semester.
g. ability to communicate effectively	High	Students make monthly presentations to the class and weekly presentations to the instructor.
h. broad education to understand impact of engineering on a global society	Moderate	Some projects pertain to global environmental issues such as waste recycling or pollution abatement.
i. recognition of need for & ability to engage in life-long learning	Moderate	Through instruction on reviews of the literature and the use of math packages.
j. knowledge of contemporary issues	High	All projects have immediate relevance to the chemical process industry. Industrial outreach seminars give additional perspective.
k. ability to use techniques, skills and modern engineering tools	High	Various math and process simulation packages are utilized.