

CME 420 Chemical Engineering Laboratory IV: Directed Research (Required)

Course Instructor: *Dr. Devinder Mahajan*

Website: none

Course Goals:

Directed laboratory research. At the end of the junior year, in consultation with an advisor, the CME student will write a 1-2 page abstract describing proposed research. This abstract must be approved by the Undergraduate Program Committee. Through work accomplished in CME 420, the student will expand the research proposal into a senior thesis written in the format of a paper in a scientific journal.

The student will defend his/her thesis in front of the UPC prior to the end of the senior year. After the defense, three copies of the finished thesis must be presented to the student's advisor at least 21 days before the date of graduation. The advisor then submits the thesis for final approval to the other UPC members. [2 credits]

Pre- or Corequisite(s): CME 410

Text(s): Recommended reading per project selection

Class/ Laboratory Schedule:

Spring, Lab Thursday, 5:20-9:10 pm

Topics Covered:

Week 1: Project topic selection

Week 2: Literature search on the selected topic

Week 3: Experimental facility set up

Week 4: Data collection

Week 5: Data collection

Week 6: Data collection

Week 7: Data collection

Week 8: Data collection

Week 9: Presentation, Project discussion

Week 10: Data collection

Week 11: Data collection

Week 12: Data collection

Week 13: Report: Rough draft due

Week 14: Data collection /analysis, Report writing continued

Week 15: Final project reports due

Contribution of course to meet professional component:

Relationship of course to program outcomes:

CTPC "3a-k" Outcomes	% contribution
A. Ability to apply knowledge of math, engineering, and science	
B. Ability to design and conduct experiments, analyze data	70%
C. Ability to design system, component or process to meet needs	
D. Ability to function on multi-disciplinary teams	9%
E. Ability to identify, formulate, and solve engineering problems	
F. Understanding of professional and ethical responsibility	5%
G. Ability to communicate effectively	10%
H. Broad education	2%
I. Recognition of need and ability to engage in life-long learning	2%
J. Knowledge of contemporary issues	2%
K. Ability to use techniques, skills, and tools in engineering practice	
Any other outcomes and assessments?	
	100%

Prepared by _____

Date Prepared: _____