

UCH893 CAPSTONE PROJECT

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Course Objectives:

A design project based course to implement integrated approach to the process and plant design of chemical process system/plant using chemical engineering courses studied in the previous semesters.

Scope of work:

Capstone project is focused on an integrated approach to the design of chemical process/plant using concepts of chemical engineering courses studied in the previous semesters. Chemical process/plant systems are to be designed satisfying requirements like reliability, optimized design, installation, maintenance, economic, environmental, social, ethical, health, safety and sustainability considerations.

In this course, students are separated in groups. Each student group shall develop a process/system design project related to chemical process/plant involving need analysis, problem definition, analysis, synthesis and optimization. Software like ANSYS, HYSYS, FLUENT and ASPEN etc. along with a spread sheet may be used for the design modeling, synthesis, optimization and analysis. The course concludes with a report submission by the group, final showcase using poster/presentation along with comprehensive viva by a committee.

Course Learning Outcomes (CLOs):

The students will be able to:

1. design a chemical process/plant system implementing an integrated approach applying knowledge accrued in various professional courses.
2. work in a team and demonstrate their role in the team work.
3. design, analyze and optimize the design of a chemical process/plant considering various requirements like reliability, optimized design, manufacturing, assembly, installation, maintenance, cost and use of design standards and industry standards.

Evaluation Scheme:

S. No.	Evaluation Elements	Weightage (%)
1	Faculty mentor	30
2	Final report	30
3	Presentation/Viva	40