
**Department of Electrical and Computer Engineering,
North South University (NSU)**

Course Outline

CSE 499A/ EEE 499A/ ETE 499A – Senior Design I

Instructor: Md. Shahriar Karim, Assistant Professor, Dept. of ECE, NSU

Course Summary: This is a senior level course, after a student has completed all the required major core courses, core math, and core science courses. This "capstone design course" involves multidisciplinary teams of students who build and test custom designed systems, components or engineering processes. Design projects selected from problems submitted by the students, faculty and local industry; Industry projects are given preference as they are best suited for meeting the course objectives; Instructional phase includes (not limited to): communications, report writing, visual aids, design process (requirements/specifications/objections, synthesis/analysis, design evaluation, implementation, maintainability, manufacturability, economic and social influences etc.), proposal preparation, estimating, project management and scheduling, contracts etc.; Performance phase includes (not limited to): design team formation and organization, design proposals, implementation of design process, project scheduling and management, design reviews, design simulation and testing, preparation of documentation, drawings, specifications, etc., written and oral presentation of completed projects.

Course Objectives: The objectives of this course are to

- a) identify an engineering and/or computing problem, build appropriate strategy to solve the problem in a systematic way with given constraints of resources, budget, time etc.
- b) design a system, component, or process to meet desired needs within realistic constraints
- c) use the techniques, skills, and modern engineering tools necessary for engineering practice.
- d) identify the usability, manufacturability, and sustainability of a system/subsystem that is going to be developed under the project

- e) create an environment to work effectively in a group on multidisciplinary project to accomplish a common goal
- f) identify and validate the impact of economic, environmental, social, political, ethical, health and safety considerations and constraints in the project development phases.
- g) demonstrate engineering/computing project development phases through various written reports such as project proposal, time-line chart, requirement analysis report, design reports, final reports, etc.
- h) demonstrate an understanding of ethical and professional responsibility in a project development phases

Course Credit: 1.5 credits

Prerequisites: Completion of at least 100 credit hours including all the major core courses, math and science courses, Ethics, Language and Communication related courses.

Online resources: IEEEExplore, ACM, IET, Springer, Wiley, Nature, Elsevier

Weightage Distribution among Assessment Tools [*will be adjusted as needed*]

Assessment Tools	Weightage (%)
Class Performance	20%
Project proposal and presentation	10%
Weekly design progress	10%
Project demo	35%
Project status report and presentation	15%
Journal Regularity	5%
Journal Quality	5%
Total	100%

Grading policy: As per NSU grading policy available in

<http://www.northsouth.edu/academic/grading-policy.html>

Course Policies:

- This course will strictly follow the "NSU Code of Conduct, Revised- 2018". However, a few important points you all should always remember, and follow, are as below:
- Students should attend class lectures and take necessary notes.
- Failure to attend an exam/presentation or failure to submit an assignment on time receives zero except when it is unavoidable because of some genuine emergencies (requires proofs). In case of emergency, students should contact the instructor before the exam or before the stipulated date of assignment.
- Unless the final grade is incorrectly computed, grade will NOT be changed once it is posted. There are no scopes of assigning additional works to improve your final grade.
- **No Facebooking, Texting etc. in class.**
- Please don't distract others by your non-academic and non-professional behaviors. **This is the bare minimum civility that we expect.**

NO Noise please...