Course name	**ECE 48700 Senior Design I**
Credit and contact hours	(1 cr.) Class 1
Course coordinator's name	Seemein Shayesteh
Textbook	None
Course information	ECE 48700 Senior Design I (1 cr.) P: Senior Standing and intent to graduate within 2 semesters. A real-life experience in engineering problem solving in a group setting from identification, planning and execution to professional-quality written and oral presentations. This is the first semester of a two semester course sequence. **Prerequisites/ Co-Requisite** Senior standing in either the BSEE or BSCmpE program. **Required, Elective, or Selected Elective:** EE Required, CE Required
Goals for the course	Upon successful completion of the course, students should be able to 1. Identify and formulate the design problem, including bringing precision to the problem statement through a requirements specification. [1] 2. Use library resources and Internet resources to find information necessary for the project. [7] 3. Use critical thinking in its design process. [1] 4. Use creative approaches when necessary to obtain project objectives. [2] 5. Conduct design using an organized design process, including planning, literature search, requirements specification, consideration of alternative approaches, determination of strategies, and design reviews. [2] 6. Conduct design using design principles. [1, 2] 7. Apply engineering principles, mathematics, and science in engineering design, not including methods, tools, and techniques. [1] 8. Apply technical knowledge to design, including methods, tools, and techniques. [1, 2, 6] 9. Analyze and interpret data. [6] 10. Determine ways to test a design to determine its functionality (success of the design). [6] 11. Value quality workmanship into the project, including neatness of the assemblies, neatness of the computer screen displays, and quality of the fit and finish, if applicable. [2] 12. Function effectively on a multi-disciplinary team through mutual support, consensus seeking, cooperation, and sharing responsibility. [5] 13. Write a project report, adhering to the specified format

	using an appropriate writing style, grammar, and spelling. [3] 14. Make an oral presentation using effective visual aids. [3]
List of topics to be covered	1. Introduction (use of labs, project notebooks, teamwork, etc.) 2. Project Proposal Presentations 3. Project Planning & Management (project preferences due) 4. Oral Presentations (project groups assigned) 5. Failure Mode Analysis 6. Group Dynamics 7. Functional Decomposition (project plans due) 8. Written Report Preparation 9. Design: Concept to prototype 10. Reliability (& project assignments) 11. Implement Safety and Standards 12. Human Factors 13. Performance Reviews 14. Intellectual Property 15. Oral project progress reports 16. Attend Final Oral Presentation for ECE 488
Syllabi approved by	Seemein Shayesteh
Date of approval	06/22/2022