

CECE 2340	DESIGN OF STRUCTURES I	3 Credit Hours
Prerequisites	CECE 2220	
Goal	To equip the student with an understanding of primary mechanisms of behavior and the basic criteria for design of simple reinforced concrete structures to enable him/her to present the final design for reinforced concrete structural elements.	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <ol style="list-style-type: none"> 1. Establish design loads. 2. Understand the design code which is used to design structures. 3. Discuss the use of basic approaches and more unique methods to analyze structures by hand. 4. Understand the design of components and complete structures from initial conceptual design to the final design. 5. Identify the responsibility of the engineer to be ethical in dealing with others and in the presentation of results from analysis and design. 	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1. Use the design codes in order to produce the design of structures. 2. Apply iteration methods to the initial design to converge on an efficient final structure. 3. Maintain ethics within the framework of professional conduct. 4. Design and analyze of basic structural elements of reinforced concrete including: <ul style="list-style-type: none"> Singly and doubly reinforced beams. One-way slabs. Columns and footings. 5. Calculate the reinforcement details which include: <ul style="list-style-type: none"> Maximum and minimum reinforcement areas. Spacing of reinforcement. Curtailed and anchorage of reinforcement. Lapping of reinforcement. 6. Present the design details to show reinforcement and size requirements for basic members by using manual drawing or CAD. 	