

Course name: REINFORCED CONCRETE & STEEL CONSTRUCTION

Course code: CE 399

Course hours: Credit hours 2, Contact hours 3

Course Pre-requisites: CE 361

Course Description

The course is offered to architecture students to orient them towards the role of structural engineering in construction projects. This is achieved by teaching main design theories for both concrete and steel structures and introducing solution techniques for simple structural problems.

Course Main Objective

In this course, the students will be to:

- Identify structural parameters, essential to structural design completion
- Prepare a preliminary statically system for simple buildings
- Design simple structural elements, made of concrete or steel
- Prepare simple structural design drawings.

Course Learning Outcomes

After the completion of this course, the students will be able to;

- Understanding of various concrete design theories
- Identification of different types of retaining walls and their applications
- Knowledge of various types steel structures
- Ability of designing R.C. uni-dimensional flexural elements
- Ability of designing Shear for R.C. elements
- Ability of designing concentrically loaded R.C. columns
- Ability of designing isolated footings
- Ability Preparation of detailed drawings for concrete and Reinforcement
- Ability of designing tension and compression steel members
- Ability of designing steel beams
- Ability of designing simple steel connections

Course evaluation

- Quizzes, practical assignments
- Weekly/biweekly reviews
- Midterm examination
- Attendance
- Final examination

Course recommended books

- Reinforced Concrete: Mechanics and Design, 6th Edition, James K. Wight and James G. MacGregor, 2011.

Course References

- Illustrated lectures and a scientific material prepared according to the PowerPoint program.