

**Wollo university KIoT**  
**DEPARTMENT OF CIVIL ENGINEERING**  
**Reinforced Concrete Design II (CEng3102), 2<sup>nd</sup> Semester**

**Prerequisite:** (Reinforced Concrete I)

**Schedule:** 2 hours lecture and 3 hours tutorial per week

**Classroom**

**Policies:**

Regular attendance is necessary to maintain pace with the lectures and the progress of the class. Therefore, attendance is expected of all students. Unexcused absence will result in a grade reduction. Acceptable reasons to miss a class include: officially approved trips, illness, death in the family and religious holiday observance.

A student who fails to attend all sessions because of the above reasons should have a minimum of 85% attendance.

**Learning**

**Objectives:**

**After completing this course the student shall be able to**

- Design slabs and beams considering inelastic moment distribution
- Design flat slabs for flexure and shear.
- Determine ultimate capacity of a slab using yield liner theory
- Classify columns based on different criteria
- Develop interaction curves for columns and use them in designing the same.
- Describe the behavior of members with torsion and Design elements for torsion
- Design the water retaining structures
- Familiar with some of Ethiopian Building code standards for the design of the above elements.

**Expected**

**Outcomes:**

**This course contributes to the following educational outcomes**

- An ability to approach and solve design problems in a structured manner
- An ability to communicate effectively
- A sensitivity to practice personal and professional ethics.
- A basic understanding of social and environmental issues as they affect engineering decisions.

**Text**

**Books:**

1. Design of Concrete Structures by Nilson
2. Reinforced Concrete Mechanics and Design by MacGregor
3. EBCS 1 - Ethiopian Building code standard for Basis of design and actions on Structures
4. EBCS 2- Ethiopian Building code standard for Structural Use of Concrete

**References:**

1. Reinforced concrete Designers Handbook by Charles E. Reynolds
2. Reinforced Concrete Structures by R. Park & T. Paulay
3. Reinforced Concrete *A fundamental Approach* by Edward G. Nawy

4. Reinforced Concrete by MacGinley
5. EU and ACI Codes for the design of Concrete Structures

**Grading:**

- |                           |     |
|---------------------------|-----|
| - Class participation     | 10% |
| - Assignments and project | 20% |
| - Mid exam                | 20% |
| - Final Exam              | 50% |