



School of Civil and Environmental Engineering  
Term 2, 2020

# CVEN4301 'ADVANCED CONCRETE STRUCTURES'

## COURSE DETAILS

Units of Credit: 6

- x further develop and advance skills in structural design
- x reinforce their understanding of philosophy of design and link design and analysis
- x develop the ability for analytical and independent critical thinking and creative problem solving
- x develop skills related to lifelong learning, such as self-reflection (ability to apply theory to practice in familiar and unfamiliar situations); and
- x

**COURSE PROGRAM**

**Term 2 2020**

## ASSESSMENT

As a final year design subject, the focus is on works practiced in industry and the subject assessment is set to match these skills and meet the learning outcomes. This course will be assessed on students' demonstrated knowledge on the topics being taught, including analysis and design of one-way slabs, two-way slabs, flat slabs and footings & retaining walls & prestressed concrete members under short- and long-term service and ultimate strength limit state loading conditions.

*Students who perform poorly in the online quizzes and demonstrations are recommended to discuss progress with the course coordinator during the semester.*

*The Final Examination is worth 60% of the Final Mark if class work is included and 100% if class work is not included. The class work/quizzes are worth 40% of the Final Mark if included. A mark of at least 40% in the final examination is required before the class work (e.g. online tasks and/or quizzes) is included in the final mark. The formal exam scripts will not be returned but students are permitted to view the marked script.*

**Note:** *The course coordinator reserves the right to adjust the final scores by scaling if agreed by the Head of School.*

| Assessment       | Rationale and assessment criteria  |
|------------------|--|
| 1. Online Quiz 1 | This quiz contains 5 questions on the deemed to comply deflection control and analysis of reinforced concrete (RC) cross section using modular ratio method. The main objective of this assessment is it to encourage students to engage with the subject content as soon as possible and develop an understanding about principles of simplified and advanced methods in design of RC structures. |
| 2. Online Quiz 2 | This quiz contains 5 questions. The main objective of this quiz is to provide opportunities for students to reinforce their knowledge and understanding of advanced reinforced concrete design with emphasis on long-term effects, deflection control of slabs under service load and practical design of slabs under ultimate conditions according to AS3600-2018 provisions.                     |
| 3. Online Quiz 3 | This quiz contains 5 questions. The main objective of this quiz is to provide opportunities for students to reinforce their knowledge about design of footings, retaining walls and principles of prestressed/post-tensioned concrete (PC) design.   |
| 4. Final exam    | The main objective of this assessment covering the entire subject contents is to provide opportunities for students to demonstrate their knowledge and understanding of advanced reinforced concrete and basic principles in prestressed concrete design and higher skills in using Australian standard AS3600-2018.   |

Details of each assessment component, the marks assigned to it, the criteria by which marks will be assigned, and the dates of submission are set out below.

**ASSESSMENT OVERVIEW**

| <b>Item</b> | <b>Length</b> | <b>Weighting</b> | <b>Learning outcomes assessed</b>              | <b>Assessment Criteria</b> | <b>Due date and submission requirements</b> | <b>Deadline for absolute fail</b> | <b>Marks returned</b> |
|-------------|---------------|------------------|--|----------------------------|---|-----------------------------------|-----------------------|
| 1. Quiz-1   | 15-20 minutes | 15%              | Application of systematic design processes and |                            |   |                                   |                       |

## RELEVANT RESOURCES

### Textbooks

- A. Foster, S.J., Kilpatrick A.E., and Warner, R.F., “Reinforced Concrete Basics”, Pearson, 2<sup>nd</sup> Ed., 2010, ISBN: 9781442538450
- B. Warner R.F., Foster S.J., Gravina, R., and Faulkes, K.A., “Prestressed Concrete”, 4<sup>th</sup> Ed., Pearson Australia, 2017, 609 pp., ISBN: 978 1 4860 1897 0.

### Additional Reading

AS3600-2018, “Concrete Structure”, Standards Australia, 2018. Including *Amendments (2019)*

### Access to Australian Standards:

Australian Standards may be accessed through the UNSW Library as follows:

1. Go to the UNSW library home page at: <http://www.library.unsw.edu.au/>
2. Click on the “Database”
3. Search for and Click on the “Australian Standards: SAI Global”
4. You need to enter your UNSW student ID and password
5. Enter the Standard desired (for example enter 3600 to search for AS3600) into the search field.

## DATES TO NOTE

Refer to MyUNSW for Important Dates available at:

<https://student.unsw.edu.au/dates>

## PLAGIARISM

Beware! An assignment that includes plagiarised material will receive a 0% Fail, and students who plagiarise may fail the course. Students who plagiarise are also liable to disciplinary action, including exclusion from enrolment.

Plagiarism is the use of another person’s work or ideas as if they were your own. When it is necessary or desirable to use other people’s material you should adequately acknowledge whose words or ideas they are and where you found them (giving the complete reference details, including page number(s)). The Learning Centre provides further information on what constitutes Plagiarism at:

<https://student.unsw.edu.au/plagiarism>

## ACADEMIC ADVICE

For information about:

- x Notes on assessments and plagiarism;
- x Special Considerations: [student.unsw.edu.au/special-consideration](https://student.unsw.edu.au/special-consideration);
- x General and Program-specific questions: [The Nucleus: Student Hub](#)
- x

