



The University of Southern Queensland

Course specification

The current and official versions of the course specifications are available on the web at
<<http://www.usq.edu.au/coursespecification/current>>.
Please consult the web for updates that may occur during the year.

Description: Detailing of Structures

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
CIV	3509	78623	2, 2008	EXT	1.00	Toowoomba

Academic group:	FOENS
Academic org:	FOES03
Student contribution band:	2
ASCED code:	030903

STAFFING

Examiner: David Guest
Moderator: Peter Penfold

REQUISITES

Pre-requisite: ENG1100

OTHER REQUISITES

Recommended prior or concurrent study: CIV1501

RATIONALE

Structural design involving calculations is one facet of the design process. The need to complement this with skilful and economic detailing is paramount to achieve a final design that will serve its function for the design life of the structure. The ability to convey details via drawings is a necessary part of achieving a final result in engineering design.

SYNOPSIS

This is a practically oriented course which introduces students to the detailing of concrete, steel and timber structures. The course aims to develop the student's understanding of element behaviour, and its significance to detailing; and to establish the student's ability to prepare working drawings for structural projects.

OBJECTIVES

On completion of this course, students should be able to:

1. explain and interpret structural drawings;
2. prepare working drawings for reinforced concrete elements, from designer's calculations, to current industry standards;
3. arrange such reinforced concrete elements to preclude steel clashes and facilitate steel fixing while satisfying design requirements;

4. prepare reinforcement bending schedules for reinforced concrete elements using CIA preferred shape tables and schedule forms;
5. illustrate and interpret steel structural framing plans (General Information plans);
6. prepare fabrication drawings for structural steel frames, satisfying strength requirements as specified, and facilitating manufacture and erection;
7. prepare holding down or cast in bolt plans compatible with the elements defined in the fabrication drawings for steel structures;
8. apply timber framing principles to the sizing of timber members in a structure;
9. prepare drawings which are clear and legible, and correctly convey the required information to the intended user;
10. apply appropriate conventions from relevant standards and building codes.

TOPICS

	Description	Weighting (%)
1.	Reinforced concrete	40.00
2.	Structural steel	40.00
3.	Structural timber	20.00

TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Onesteel.com Hot Rolled Structural Steel products (available online)

Although there is no textbook for this course other than the Study Book provided, the major SAA codes that underlie the three main modules are: for the reinforced concrete module - AS3600 (2001) Concrete Structures; for the steel module - AS4100 (1998) Steel Structures; and, for the timber module - AS1720.1 (1997) Timber Structures and AS1720.2 (1990) Timber Properties. All standards noted can be accessed through the USQ library web pages.

Many other codes of practice and recognised industry standards, though not actually quoted may be inferred in the text or need to be applied in the completion of the set assignments. Chief among these are: AS1100.101 (1992) Technical Drawing - General Principles AS1100.501 (2002) Technical Drawing - Structural Engineering Drawing AS3679.1 (1996) Hot Rolled Bars and Sections AS1101.3 (2005) - Graphical Symbols For General Engineering - Welding AS1684 (2006) - Residential Timber-Framed Construction AS2870 (1996) - Residential Slabs and Footing Construction AS1100.301 (1985) Technical Drawing - Architectural Drawing AS1100.401 (1984) Technical Drawing - Engineering Surveying And Survey

Adams and Button 1992, *Australian Domestic Construction Manual - Uniform Building Code of Australia*,

AISC 1995, *Steel Construction: A Guide To The Requirements For Engineering Drawings Of Structural Steelwork*, *Steel Construction*, Vol 29, no.3, p624.182 P2.

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Private Study	70.00
Project Work	85.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
PROJECT 1 REINFORCED CONCRETE	400.00	40.00	22 Aug 2008
PROJECT 2 STRUCTURAL STEEL	400.00	40.00	26 Sep 2008
PROJECT 3 TIMBER FRAMING	200.00	20.00	24 Oct 2008

IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:
There are no attendance requirements for this course. However, it is the students' responsibility to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:
The course objectives define the student learning outcomes for a course. The assessment item(s) that may be used to assess student achievement of an objective are shown in parenthesis. On completion of this course, students should be able to:
- 3 Penalties for late submission of required work:
If students submit assignments after the due date without extenuating circumstances then a penalty of 5% of the assigned mark may apply for each working day late up to a maximum of ten working days at which time a mark of zero can be recorded for that assignment.
- 4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade in a course a student must obtain at least 50% of the total weighted marks for the course.
- 5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the weighted aggregate of the marks (or grades) obtained for each of the summative assessment items in the course.
- 6 Examination information:
There is no examination in this course.
- 7 Examination period when Deferred/Supplementary examinations will be held:
Not applicable.
- 8 University Regulations:

Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/corporateservices/calendar/part5.htm> or in the current USQ Handbook.

ASSESSMENT NOTES

- 1 The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner.
- 2 Students must retain a copy of each item submitted for assessment. This must be despatched to USQ within 24 hours if required by the Examiner.
- 3 In accordance with University's Assignment Extension Policy (Regulation 5.6.1), the examiner of a course may grant an extension of the due date of an assignment in extenuating circumstances.
- 4 The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media.
- 5 The Faculty will NOT accept submission of assignments by facsimile.
- 6 Students who do not have regular access to postal services or who are otherwise disadvantaged by these regulations may be given special consideration. They should contact the examiner of the course to negotiate such special arrangements.
- 7 In the event that a due date for an assignment falls on a local public holiday in their area, such as a Show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.
- 8 Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non-directed personal study.
- 9 Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded IDS (Incomplete - Deferred Examination); IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).