



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: Solid Modelling

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
MEC	2304	90551	2, 2009	ONC	1.00	Toowoomba

<b>Academic group:</b>	FOENS
<b>Academic org:</b>	FOES02
<b>Student contribution band:</b>	2
<b>ASCED code:</b>	030701

### STAFFING

Examiner: Peter Penfold  
Moderator: Chris Snook

### OTHER REQUISITES

Recommended prior study: ENG1100

### RATIONALE

Many graduates from engineering programs find employment in design areas where solid modelling software is used for design purposes and to produce working drawings. It is therefore appropriate for students to be instructed not only in the use of solid modelling software but also those modelling techniques that best facilitate design and preparation of subsequent working drawings.

### SYNOPSIS

This course will provide opportunities for students to develop skills in the use of feature based, parametric solid modelling. The course also develops the student's skills and confidence in those techniques and principles deemed to be essential for solid modelling. Furthermore, it aims to develop their awareness of the importance of modelling as a design, drafting, communications and manufacturing tool.

### OBJECTIVES

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:

1. construct any given geometrical shape, conic section and develop any surface; (Assignment 2)
2. understand general solid modelling techniques employed in design and manufacture; (Assignment 1; Assignment 2)
3. demonstrate proficiency in developing a solid model for an engineering product or device using a 'feature based' CAD system; (Assignment 1; Assignment 2)

4. produce engineering assembly drawings and working detail drawings for an engineered product or device from a CAD solid model; (Assignment 2)
5. propose a solution to a given engineering problem which requires the production of a solid model and subsequent working drawings; (Assignment 2)

## TOPICS

	Description	Weighting (%)
1.	Geometric constructions and developments	10.00
2.	Features of mechanical components	10.00
3.	Principles of feature based, parametric solid modelling	40.00
4.	Assembly drawings	15.00
5.	Detail drawings	15.00
6.	Manufacturer's reference materials	10.00

## 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).

*MEC2304 Solid modelling: study package*, University of Southern Queensland, Toowoomba.

Parametric feature-based solid modelling software (prior to the start of the semester the Examiner will inform you on the software to use and from where it can be obtained or accessed).

Boudy, AW 2007, *Engineering Drawing*, 7th edn, McGraw Hill,

## 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.

Engineering Drawing Handbook SAA-HB7 Standards Australia.

## STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assessments	80.00
Directed Study	28.00
Lectures	8.00
Tutorials	39.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	250.00	25.00	04 Sep 2009
ASSIGNMENT 2	750.00	75.00	26 Oct 2009

## IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:**  
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and 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:**  
To satisfactorily complete an individual assessment item a student must achieve at least 50% of the marks or a grade of at least C-. (Depending upon the requirements in Statement 4 below, students may not have to satisfactorily complete each assessment item to receive a passing grade in this course.)
- 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).