

## In Progress

Please note that this Unit Profile is still in progress. The content below is subject to change.



# ENAM12006 *Mechanical Component Selection*

## Term 2 - 2024

Profile information current as at 19/05/2024 06:06 am

All details in this unit profile for ENAM12006 have been officially approved by CQU University and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## General Information

### Overview

This unit introduces you to the relationship between material properties, structure, and functional performance of mechanical components such as gears, shafts, bearings, fasteners etc. You will apply material selection to determine the load for individual machine elements. Subsequently, you will learn to determine the shape and sizes of components by the way of comprehensive analysis, estimation, and selection. You will select and specify common mechanical components like drive line, shafts, axles, gears, bearings, mechanical fasteners, and other relevant parts and modules complying with the relevant standards and codes. You will specify fits and tolerances, and finishes required for mechanical components.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

ENAG11005 Mechanics or ENEG11006 Engineering Statics, and MATH11160 Technology Mathematics or MATH11218 Engineering Foundation Mathematics.

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

### Offerings For Term 2 - 2024

- Online

### Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

### Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

## Class and Assessment Overview

### Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

### Class Timetable

#### [Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

#### [Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

### Assessment Overview

#### Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

## CQUniversity Policies

**All University policies are available on the [CQUniversity Policy site](#).**

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

## Previous Student Feedback

### Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

#### Feedback from Coordinator reflection

##### **Feedback**

The suitable textbooks need to be continuously searched and selected to avoid the typo errors and the mixed usage of two units (US customary and SI).

##### **Recommendation**

The chapter contents might be taken from the different suitable textbooks.

## Unit Learning Outcomes

### On successful completion of this unit, you will be able to:

1. Explain the relationship between material properties, structure, and functional performance of mechanical components such as gears, shafts, bearings, fasteners etc
2. Perform simple stress analysis using design limiting criteria to select mechanical components
3. Interpret Australian standards and design codes governing the selection of mechanical components
4. Identify components to suit a given application and justify the basis for the selection
5. Work and learn collaboratively to complete a team project.

The Learning Outcomes for this unit are linked with the Engineers Australia Stage 1 Competency Standards for Engineering Associates in the areas of 1. Knowledge and Skill Base, 2. Engineering Application Ability and 3. Professional and Personal Attributes at the following levels:

#### Introductory

3.3 Creative, innovative and pro-active demeanour. (LO: 2N 3N 4N )

3.6 Effective team membership and team leadership. (LO: 5N )

#### Intermediate

1.1 Descriptive formula-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the practice area. (LO: 2I 3I ) 1.2 Procedural-level understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the practice area. (LO: 1I 2I 3I )

1.5 Knowledge of engineering design practice and contextual factors impacting the practice area. (LO: 2I 4I 5N ) 1.6

Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the area of practice. (LO: 2I 3I 4I 5N ) 3.1 Ethical conduct and professional accountability. (LO: 4I 5I )

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#### Advanced

1.3 In-depth practical knowledge and skills within specialist sub-disciplines of the practice area. (LO: 1I 2A 3A ) 1.4

Discernment of engineering developments within the practice area. (LO: 1I 2A 3A 4I 5I ) 2.1 Application of established

technical and practical methods to the solution of well-defined engineering problems. (LO: 1A 2I 3I 4A ) 2.2 Application of

technical and practical techniques, tools and resources to well-defined engineering problems. (LO: 2A 3A 4A ) 2.3

Application of systematic design processes to well-defined engineering problems. (LO: 1I 2A 3A 4A 5N ) 3.2 Effective oral

and written communication in professional and lay domains. (LO: 1I 2I 3I 4A ) 3.4 Professional use and management of

information. (LO: 2I 3A 4A 5N )

*Note: LO refers to the Learning Outcome number(s) which link to the competency and the levels: N - Introductory, I - Intermediate and A - Advanced.*

Refer to the Engineering Undergraduate Course Moodle site for further information on the Engineers Australia's Stage 1 Competency Standard for Professional Engineers and course level mapping information

<https://moodle.cqu.edu.au/course/view.php?id=1511>

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
<b>1 - Written Assessment - 40%</b>	•	•		•	•
<b>2 - Written Assessment - 50%</b>	•		•	•	•
<b>3 - Online Quiz(zes) - 10%</b>		•	•		

## Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Communication			•	•	•
2 - Problem Solving	•	•	•		
3 - Critical Thinking		•	•	•	
4 - Information Literacy	•				
5 - Team Work					•
6 - Information Technology Competence					
7 - Cross Cultural Competence					
8 - Ethical practice					•
9 - Social Innovation					
10 - Aboriginal and Torres Strait Islander Cultures					

## Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Written Assessment - 40%	•	•	•			•		•		
2 - Written Assessment - 50%	•	•		•		•		•		
3 - Online Quiz(zes) - 10%		•	•					•		

## Textbooks and Resources

Information for Textbooks and Resources has not been released yet.

This information will be available on Monday 17 June 2024

## Academic Integrity Statement

Information for Academic Integrity Statement has not been released yet.

This unit profile has not yet been finalised.