



# MECH1001

## Introduction to Mechanical Engineering

Session 2, Special circumstance 2020

*School of Engineering*

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#### Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

#### Notice

As part of [Phase 3 of our return to campus plan](#), most units will now run tutorials, seminars and other small group learning activities on campus for the second half-year, while keeping an online version available for those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face and online activities for your unit, please go to [timetable viewer](#). To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

## General Information

Unit convenor and teaching staff

Unit Convenor, Lecturer

Ming Li

[ming.li@mq.edu.au](mailto:ming.li@mq.edu.au)

Contact via 02 9850 9532

E6A-324

Monday/Friday 4-5pm

Credit points

10

Prerequisites

(PHYS1510 or PHYS140) and (MATH135 or MATH132 or MATH1010 or MATH1015)

Corequisites

Co-badged status

Unit description

The unit introduces the broad field of Mechanical engineering concepts. It will cover fundamental mechanics knowledge that is required to analyse forces in both static and dynamic physical system and also to perform fundamental fluid mechanics analysis. At the end of the unit, students are expected to demonstrate the ability to analyse and solve basic mechanics problems fluently.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

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

**ULO1:** Perform structural analysis of three-dimensional machine frames and structures.

**ULO2:** Demonstrate proficiency in applying mathematical knowledge to solve fundamental engineering dynamic problems.

**ULO3:** Solve problems in both static and dynamic systems.

**ULO4:** Demonstrate proficiency in the presentation of introductory level mechanical engineering solutions.

## General Assessment Information

### Late submissions

Late submissions of assignments will be subject the following penalty: 1 to 24 hours -20%, 24 hours to 48 hours -40%, greater than 48 hours will result in no mark being awarded. Quizzes cannot be taken late. Missing a tutorial will result in a grade of 0 for that tutorial. Extenuating circumstances will be considered upon lodgement of a formal notice of disruption of studies.

### Hurdle Requirement

The final examination is a hurdle requirement because it is the only reliable assessment of individual performance for this unit. A grade of 45% or more in the final examination is a condition of passing this unit. If you are given a second opportunity to sit the final examination as a result of failing to meet the minimum mark required, you will be offered that chance during the supplementary examination period and will be notified of the exact day and time after the publication of final results for the unit. The second attempt at a hurdle assessment is graded as pass fail. The maximum grade for a second attempt is the hurdle threshold grade.

Participation in 10 tutorial sessions is a hurdle requirement. Note that tutorials will start in week 2.

### Grading and passing requirement for unit

In order to pass this unit a student must obtain a mark of 50 or more for the unit (i.e. obtain a passing grade P/ CR/ D/ HD), and a grade of at least 45% on the final exam, and participate in at least 10 tutorials.

For further details about grading, please refer below in the policies and procedures section.

### Final Examinations

Final examinations will take place at the end of the semester. For further information, please refer to the Examination Timetable website on [www.mq.edu.au](http://www.mq.edu.au)

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Final Exam</a>	50%	Yes	TBA
<a href="#">Assignments</a>	20%	No	Week 7, Week 12
<a href="#">Online quiz</a>	30%	No	Week 4, Week 7, Week 10, Week 12

## Final Exam

Assessment Type <sup>1</sup>: Examination

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **TBA**

Weighting: **50%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

This is a hurdle assessment task. The final exam will be a three hour exam testing mechanical concepts.

On successful completion you will be able to:

- Perform structural analysis of three-dimensional machine frames and structures.
- Demonstrate proficiency in applying mathematical knowledge to solve fundamental engineering dynamic problems.
- Solve problems in both static and dynamic systems.
- Demonstrate proficiency in the presentation of introductory level mechanical engineering solutions.

## Assignments

Assessment Type <sup>1</sup>: Quantitative analysis task

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Week 7, Week 12**

Weighting: **20%**

There will be two assignments, each worth 10%. A portion of the available grades will be awarded for presentation of work. Markers WILL NOT grade poorly organized or illegible scans or drafts. Well presented work is highly legible, annotated, well structured, and presented with page numbers and student IDs on every page.

On successful completion you will be able to:

- Perform structural analysis of three-dimensional machine frames and structures.
- Demonstrate proficiency in applying mathematical knowledge to solve fundamental engineering dynamic problems.
- Solve problems in both static and dynamic systems.

- Demonstrate proficiency in the presentation of introductory level mechanical engineering solutions.

## Online quiz

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 24 hours

Due: **Week 4, Week 7, Week 10, Week 12**

Weighting: **30%**

There will be four online quizzes, each worth 7.5%. The quiz will be open for a specific time and all students must take the quiz during that time. All students are to ensure that they have their own resources (Computers, tablet, smart phone etc) to take part in the quiz.

On successful completion you will be able to:

- Perform structural analysis of three-dimensional machine frames and structures.
- Demonstrate proficiency in applying mathematical knowledge to solve fundamental engineering dynamic problems.
- Solve problems in both static and dynamic systems.
- Demonstrate proficiency in the presentation of introductory level mechanical engineering solutions.

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<sup>1</sup> If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

<sup>2</sup> Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

## Delivery and Resources

### Text books:

"Vector Mechanics for Engineers: Statics and Dynamics 12th Edition", by Beer, Johnston, Mazurek, Cornwell and Self

### Resources Required:

You must bring a log book to tutorial. Tutors will only mark solutions written into this log book. You should obtain a quality scientific calculator and be familiar with its use.

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Students seeking more policy resources can visit the [Student Policy Gateway \(https://students.mq.edu.au/support/study/student-policy-gateway\)](https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

If you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Changes in Response to Student Feedback

No changes.