THE UNIVERSITY of ADELAIDE

# 2022 Study Plan
# Bachelor of Engineering (Honours) (Mechanical) — Semester 1 Start

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## Study Plan Notes

**Program structure**
This is a four-year program with electives commencing in the second year. The final year contains the two-semester Research Project capstone course. Students may follow study plans specifying electives to complete a 24-unit Major and/or a 12-unit Minor within the program. Successful completion of the Program with a Major requires completion of all courses specified in that Major's study plan. All Majors consist of the same number of units and fill available electives slots, with five remaining to be chosen by the student.

**Alternative courses**
There are a small number of alternative course offerings that are not indicated in the study plans. TECH 1006 may be taken as a semester 2 alternative to CEME 1004. CEME 2001 may be taken as a semester 1 alternative to MECH ENG 2002. ENG 3004 and ENG 3005 may be taken in either semester. The consecutive pair ENG 4001A and ENG 4001B may commence in either semester.

**Hands on Training**
All Mechanical Engineering students are required to complete the ECMS Hands-On Training courses, information regarding this will be communicated via email to students.

**Internships**
All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship during the course of their studies. Internships are self-sourced and further information can be found on the Engineering Internships web page: https://ecms.adelaide.edu.au/study-with-us/student-support/internships/engineering.

**General Electives**
How to choose an elective course in your area of interest?
Please refer to the steps via the link: https://ecms.adelaide.edu.au/study-with-us/student-support/enrolment

**Program Rules**
For academic program rules please refer to the following website: https://calendar.adelaide.edu.au/faculty/ecms

**Information and Enrolment Advice**
Ask ECMS
Email: askecms@adelaide.edu.au
Website: https://ecms.adelaide.edu.au/study-with-us/student-support

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## No Major

| | | | | |
|---|---|---|---|---|
| **Year 1** | | | | |
| S 1 | MATHS 1011 Mathematics IA ☐ | ^ENG 1001 Introduction to Engineering ☐ | CEME 1004 Engineering Mechanics - Statics ☐ | ELEC ENG 1101 Electronic Systems ☐ |
| S 2 | MATHS 1012 Mathematics IB ☐ | ENG 1002 Programming (Matlab and C) ☐ | CHEM ENG 1009 Materials I ☐ | MECH ENG 1007 Engineering Mechanics - Dynamics ☐ |
| **Year 2** | | | | |
| S 1 | MATHS 2106 Differential Equations for Engineers II ☐ | MECH ENG 2100 Design Practice ☐ | MECH ENG 2021 Thermo-Fluids I ☐ | Major course / Elective Year 2 (see elective table) **OR** General Elective ☐ |
| S 2 | MATHS 2107 Statistics & Numerical Methods II ☐ | MECH ENG 2002 Stress Analysis & Design ☐ | MECH ENG 2019 Dynamics & Control I ☐ | MECH ENG 2101 Mechatronics IM ☐ |
| **Year 3** | | | | |
| S 1 | ENG 3005 Research Methods & Project Management ☐ | MECH ENG 3102 Heat Transfer & Thermodynamics ☐ | Major course / Elective Year 3 (see elective table) ☐ | Major course / Elective Year 3 / (see elective table) **OR** General Elective ☐ |
| S 2 | ENG 3004 Systems Engineering & Industry Practice ☐ | MECH ENG 3111 Acoustics and Vibrations ☐ | Major course / Elective Year 3 (see elective table) ☐ | Major course / Elective Year 3 (see elective table) ☐ |
| **Internship** | | | | |
| All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship during the course of their studies – see note on page 2. | | | | |
| **Year 4** | | | | |
| S 1 | ENG 4001A Research Project Part A ☐ | Major course / Elective Year 4 (see elective table) ☐ | Major course / Elective Year 4 (see elective table) ☐ | Major course / Elective Year 4 (see elective table) ☐ |
| S 2 | ENG 4001B Research Project Part B ☐ | Major course / Elective Year 4 (see elective table) ☐ | Major course / Elective Year 4 (see elective table) ☐ | Major course / Elective Year 4 (see elective table) ☐ |

| | |
|---|---|
| Core Course | Major course / Elective (see table) |

^ Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering.

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## Aerospace Engineering

| | | | | |
|---|---|---|---|---|
| **Year 1** | | | | |
| S 1 | MATHS 1011 Mathematics IA ☐ | ^ENG 1001 Introduction to Engineering ☐ | CEME 1004 Engineering Mechanics - Statics ☐ | ELEC ENG 1101 Electronic Systems ☐ |
| S 2 | MATHS 1012 Mathematics IB ☐ | ENG 1002 Programming (Matlab and C) ☐ | CHEM ENG 1009 Materials I ☐ | MECH ENG 1007 Engineering Mechanics - Dynamics ☐ |
| **Year 2** | | | | |
| S 1 | MATHS 2106 Differential Equations for Engineers II ☐ | MECH ENG 2100 Design Practice ☐ | MECH ENG 2021 Thermo-Fluids I ☐ | MECH ENG 2020 Materials & Manufacturing ☐ |
| S 2 | MATHS 2107 Statistics & Numerical Methods II ☐ | MECH ENG 2002 Stress Analysis & Design ☐ | MECH ENG 2019 Dynamics & Control I ☐ | MECH ENG 2101 Mechatronics IM ☐ |
| **Year 3** | | | | |
| S 1 | ENG 3005 Research Methods & Project Management ☐ | MECH ENG 3102 Heat Transfer & Thermodynamics ☐ | MECH ENG 3100 Aeronautical Engineering ☐ | Elective Year 3 (see elective table) ☐ |
| S 2 | ENG 3004 Systems Engineering & Industry Practice ☐ | MECH ENG 3111 Acoustics and Vibrations ☐ | MECH ENG 3101 Applied Aerodynamics ☐ | MECH ENG 3104 Space Vehicle Design ☐ |
| **Internship** | | | | |
| All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship during the course of their studies – see note on page 2. | | | | |
| **Year 4** | | | | |
| S 1 | ENG 4001A Research Project Part A ☐ | MECH ENG 4106 Aerospace Propulsion ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ |
| S 2 | ENG 4001B Research Project Part B ☐ | MECH ENG 4108 Aircraft Design ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ |

| | | |
|---|---|---|
| Core Course | Major course | Elective (see table) |

^ Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering.

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# 2022 Study Plan
# Bachelor of Engineering (Honours) (Mechanical) — Semester 1 Start

## Defence Systems Major

| | | | | |
|---|---|---|---|---|
| **Year 1** | | | | |
| S 1 | MATHS 1011 Mathematics IA ☐ | ^ENG 1001 Introduction to Engineering ☐ | CEME 1004 Engineering Mechanics - Statics ☐ | ELEC ENG 1101 Electronic Systems ☐ |
| S 2 | MATHS 1012 Mathematics IB ☐ | ENG 1002 Programming (Matlab and C) ☐ | CHEM ENG 1009 Materials I ☐ | MECH ENG 1007 Engineering Mechanics - Dynamics ☐ |
| **Year 2** | | | | |
| S 1 | MATHS 2106 Differential Equations for Engineers II ☐ | MECH ENG 2100 Design Practice ☐ | MECH ENG 2021 Thermo-Fluids I ☐ | MECH ENG 2020 Materials & Manufacturing ☐ |
| S 2 | MATHS 2107 Statistics & Numerical Methods II ☐ | MECH ENG 2002 Stress Analysis & Design ☐ | MECH ENG 2019 Dynamics & Control I ☐ | MECH ENG 2101 Mechatronics IM ☐ |
| **Year 3** | | | | |
| S 1 | ENG 3005 Research Methods & Project Management ☐ | MECH ENG 3102 Heat Transfer & Thermodynamics ☐ | MECH ENG 3026 Advanced Mechanics of Materials ☐ | POLIS 1104 Introduction to Comparative Politics ☐ |
| S 2 | ENG 3004 Systems Engineering & Industry Practice ☐ | MECH ENG 3111 Acoustics and Vibrations ☐ | ENG 3305 Human Factors for Decision Making ☐ | Elective Year 3 (see elective table) ☐ |
| **Internship** | | | | |
| All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship during the course of their studies – see note on page 2. | | | | |
| **Year 4** | | | | |
| S 1 | ENG 4001A Research Project Part A ☐ | ENG 4010 Defence Leadership ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ |
| S 2 | ENG 4001B Research Project Part B ☐ | ENG 4020 Complex Systems Engineering ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ |

| Core Course | Major course | Elective (see table) |
|---|---|---|

^ Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering.

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# 2022 Study Plan
# Bachelor of Engineering (Honours) (Mechanical) — Semester 1 Start

## Mechanical Engineering Major

| | | | | |
|---|---|---|---|---|
| **Year 1** | | | | |
| S 1 | MATHS 1011 Mathematics IA ☐ | ^ENG 1001 Introduction to Engineering ☐ | CEME 1004 Engineering Mechanics - Statics ☐ | ELEC ENG 1101 Electronic Systems ☐ |
| S 2 | MATHS 1012 Mathematics IB ☐ | ENG 1002 Programming (Matlab and C) ☐ | CHEM ENG 1009 Materials I ☐ | MECH ENG 1007 Engineering Mechanics - Dynamics ☐ |
| **Year 2** | | | | |
| S 1 | MATHS 2106 Differential Equations for Engineers II ☐ | MECH ENG 2100 Design Practice ☐ | MECH ENG 2021 Thermo-Fluids I ☐ | MECH ENG 2020 Materials & Manufacturing ☐ |
| S 2 | MATHS 2107 Statistics & Numerical Methods II ☐ | MECH ENG 2002 Stress Analysis & Design ☐ | MECH ENG 2019 Dynamics & Control I ☐ | MECH ENG 2101 Mechatronics IM ☐ |
| **Year 3** | | | | |
| S 1 | ENG 3005 Research Methods & Project Management ☐ | MECH ENG 3102 Heat Transfer & Thermodynamics ☐ | MECH ENG 3026 Advanced Mechanics of Materials ☐ | Elective Year 3 (see elective table) ☐ |
| S 2 | ENG 3004 Systems Engineering & Industry Practice ☐ | MECH ENG 3111 Acoustics and Vibrations ☐ | MECH ENG 3101 Applied Aerodynamics ☐ | Elective Year 3 (see elective table) ☐ |
| **Internship** | | | | |
| All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship during the course of their studies – see note on page 2. | | | | |
| **Year 4** | | | | |
| S 1 | ENG 4001A Research Project Part A ☐ | MECH ENG 4118 Finite Element Analysis of Structures ☐ | MECH ENG 4111 CFD for Engineering Applications ☐ | MECH ENG 4121 Materials Selection & Failure Analysis ☐ |
| S 2 | ENG 4001B Research Project Part B ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ |

| Core Course | Major course | Elective (see table) |
|---|---|---|

^ Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering.

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# 2022 Study Plan
# Bachelor of Engineering (Honours) (Mechanical) — Semester 1 Start
## Mechatronics and Robotics Major

| | | | | |
|---|---|---|---|---|
| **Year 1** | | | | |
| S 1 | MATHS 1011 Mathematics IA ☐ | ^ENG 1001 Introduction to Engineering ☐ | CEME 1004 Engineering Mechanics - Statics ☐ | ELEC ENG 1101 Electronic Systems ☐ |
| S 2 | MATHS 1012 Mathematics IB ☐ | ENG 1002 Programming (Matlab and C) ☐ | CHEM ENG 1009 Materials I ☐ | MECH ENG 1007 Engineering Mechanics - Dynamics ☐ |
| **Year 2** | | | | |
| S 1 | MATHS 2106 Differential Equations for Engineers II ☐ | MECH ENG 2100 Design Practice ☐ | MECH ENG 2021 Thermo-Fluids I ☐ | ELEC ENG 2105 Electronic Circuits M ☐ |
| S 2 | MATHS 2107 Statistics & Numerical Methods II ☐ | MECH ENG 2002 Stress Analysis & Design ☐ | MECH ENG 2019 Dynamics & Control I ☐ | MECH ENG 2101 Mechatronics IM ☐ |
| **Year 3** | | | | |
| S 1 | ENG 3005 Research Methods & Project Management ☐ | MECH ENG 3102 Heat Transfer & Thermodynamics ☐ | MECH ENG 3106 Mechatronics II ☐ | Elective Year 3 (see elective table) ☐ |
| S 2 | ENG 3004 Systems Engineering & Industry Practice ☐ | MECH ENG 3111 Acoustics and Vibrations ☐ | MECH ENG 3032 Micro-Controller Programming ☐ | MECH ENG 4102 Advanced PID Control ☐ |
| **Internship** | | | | |
| All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship during the course of their studies – see note on page 2. | | | | |
| **Year 4** | | | | |
| S 1 | ENG 4001A Research Project Part A ☐ | MECH ENG 4124 Robotics M ☐ | MECH ENG 4080 Modern Control Systems ☐ | Elective Year 4 (see elective table) ☐ |
| S 2 | ENG 4001B Research Project Part B ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ |

| Core Course | Major course | Elective (see table) |
|---|---|---|

^ Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering.

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# 2022 Study Plan
# Bachelor of Engineering (Honours) (Mechanical) — Semester 1 Start
## Medical Technologies Major

| | | | | |
|---|---|---|---|---|
| **Year 1** | | | | |
| S 1 | MATHS 1011 Mathematics IA ☐ | ^ENG 1001 Introduction to Engineering ☐ | CEME 1004 Engineering Mechanics - Statics ☐ | ELEC ENG 1101 Electronic Systems ☐ |
| S 2 | MATHS 1012 Mathematics IB ☐ | ENG 1002 Programming (Matlab and C) ☐ | CHEM ENG 1009 Materials I ☐ | MECH ENG 1007 Engineering Mechanics - Dynamics ☐ |
| **Year 2** | | | | |
| S 1 | MATHS 2106 Differential Equations for Engineers II ☐ | MECH ENG 2100 Design Practice ☐ | MECH ENG 2021 Thermo-Fluids I ☐ | ANAT SC 1102 Human Anatomy and Physiology IA ☐ |
| S 2 | MATHS 2107 Statistics & Numerical Methods II ☐ | MECH ENG 2002 Stress Analysis & Design ☐ | MECH ENG 2019 Dynamics & Control I ☐ | MECH ENG 2101 Mechatronics IM ☐ |
| **Year 3** | | | | |
| S 1 | ENG 3005 Research Methods & Project Management ☐ | MECH ENG 3102 Heat Transfer & Thermodynamics ☐ | ENG 3101 Introduction to Medical Technologies ☐ | PHYSIOL 2510 Physiology IIA: Heart, Lung & Neuromuscular Systems ☐ |
| S 2 | ENG 3004 Systems Engineering & Industry Practice ☐ | MECH ENG 3111 Acoustics and Vibrations ☐ | ELEC ENG 3113 Principles of Medical Imaging ☐ | Elective Year 3 (see elective table) ☐ |
| **Internship** | | | | |
| All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship during the course of their studies – see note on page 2. | | | | |
| **Year 4** | | | | |
| S 1 | ENG 4001A Research Project Part A ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ |
| S 2 | ENG 4001B Research Project Part B ☐ | MECH ENG 4101 Biomechanical Engineering ☐ | ELEC ENG 4115 Biomedical Instrumentation ☐ | Elective Year 4 (see elective table) ☐ |

| Core Course | Major course | Elective (see table) |
|---|---|---|

^ Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering.

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# 2022 Study Plan
# Bachelor of Engineering (Honours) (Mechanical) — Semester 1 Start

## Renewable Energy Major

| | | | | |
|---|---|---|---|---|
| **Year 1** | | | | |
| S 1 | MATHS 1011 Mathematics IA ☐ | ^ENG 1001 Introduction to Engineering ☐ | CEME 1004 Engineering Mechanics - Statics ☐ | ELEC ENG 1101 Electronic Systems ☐ |
| S 2 | MATHS 1012 Mathematics IB ☐ | ENG 1002 Programming (Matlab and C) ☐ | CHEM ENG 1009 Materials I ☐ | MECH ENG 1007 Engineering Mechanics - Dynamics ☐ |
| **Year 2** | | | | |
| S 1 | MATHS 2106 Differential Equations for Engineers II ☐ | MECH ENG 2100 Design Practice ☐ | MECH ENG 2021 Thermo-Fluids I ☐ | MECH ENG 2020 Materials & Manufacturing ☐ |
| S 2 | MATHS 2107 Statistics & Numerical Methods II ☐ | MECH ENG 2002 Stress Analysis & Design ☐ | MECH ENG 2019 Dynamics & Control I ☐ | MECH ENG 2101 Mechatronics IM ☐ |
| **Year 3** | | | | |
| S 1 | ENG 3005 Research Methods & Project Management ☐ | MECH ENG 3102 Heat Transfer & Thermodynamics ☐ | ENTREP 3006 Energy Management, Economics & Policy ☐ | Elective Year 3 (see elective table) ☐ |
| S 2 | ENG 3004 Systems Engineering & Industry Practice ☐ | MECH ENG 3111 Acoustics and Vibrations ☐ | Elective Year 3 (see elective table) ☐ | Elective Year 3 (see elective table) ☐ |
| **Internship** | | | | |
| All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship during the course of their studies – see note on page 2. | | | | |
| **Year 4** | | | | |
| S 1 | ENG 4001A Research Project Part A ☐ | MECH ENG 4064 Renewable Power Technologies ☐ | MECH ENG 4112 Combustion Technologies & High Temperature Processes ☐ | Elective Year 4 (see elective table) ☐ |
| S 2 | ENG 4001B Research Project Part B ☐ | CHEM ENG 4048 Biofuels, Biomass and Wastes ☐ | ELEC ENG 4111 Distributed Generation Technologies ☐ | Elective Year 4 (see elective table) ☐ |

| Core Course | Major course | Elective (see table) |
|---|---|---|

^ Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering.

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# 2022 Study Plan
# Bachelor of Engineering (Honours) (Mechanical) — Semester 1 Start
## Smart Technology Major

| | | | | |
|---|---|---|---|---|
| **Year 1** | | | | |
| S 1 | MATHS 1011 Mathematics IA ☐ | ^ENG 1001 Introduction to Engineering ☐ | CEME 1004 Engineering Mechanics - Statics ☐ | ELEC ENG 1101 Electronic Systems ☐ |
| S 2 | MATHS 1012 Mathematics IB ☐ | ENG 1002 Programming (Matlab and C) ☐ | CHEM ENG 1009 Materials I ☐ | MECH ENG 1007 Engineering Mechanics - Dynamics ☐ |
| **Year 2** | | | | |
| S 1 | MATHS 2106 Differential Equations for Engineers II ☐ | MECH ENG 2100 Design Practice ☐ | MECH ENG 2021 Thermo-Fluids I ☐ | COMP SCI 1102 Object Oriented Programming ☐ |
| S 2 | MATHS 2107 Statistics & Numerical Methods II ☐ | MECH ENG 2002 Stress Analysis & Design ☐ | MECH ENG 2019 Dynamics & Control I ☐ | MECH ENG 2101 Mechatronics IM ☐ |
| **Year 3** | | | | |
| S 1 | ENG 3005 Research Methods & Project Management ☐ | MECH ENG 3102 Heat Transfer & Thermodynamics ☐ | COMP SCI 2103 Algorithm Design & Data Structures ☐ | Elective Year 3 (see elective table) ☐ |
| S 2 | ENG 3004 Systems Engineering & Industry Practice ☐ | MECH ENG 3111 Acoustics and Vibrations ☐ | MECH ENG 3032 Micro-Controller Programming ☐ | Elective Year 3 (see elective table) ☐ |
| **Internship** | | | | |
| All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship during the course of their studies – see note on page 2. | | | | |
| **Year 4** | | | | |
| S 1 | ENG 4001A Research Project Part A ☐ | COMP SCI 3001 Computer Networks & Applications ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ |
| S 2 | ENG 4001B Research Project Part B ☐ | ELEC ENG 4107 Autonomous Systems ☐ | COMP SCI 3012 Distributed Systems ☐ | Elective Year 4 (see elective table) ☐ |

| Core Course | Major course | Elective (see table) |
|---|---|---|

^ Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering.

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# 2022 Study Plan
# Bachelor of Engineering (Honours) (Mechanical) — Semester 1 Start
## Sports Engineering Major

| | | | | |
|---|---|---|---|---|
| **Year 1** | | | | |
| S 1 | MATHS 1011 Mathematics IA ☐ | ^ENG 1001 Introduction to Engineering ☐ | CEME 1004 Engineering Mechanics - Statics ☐ | ELEC ENG 1101 Electronic Systems ☐ |
| S 2 | MATHS 1012 Mathematics IB ☐ | ENG 1002 Programming (Matlab and C) ☐ | CHEM ENG 1009 Materials I ☐ | MECH ENG 1007 Engineering Mechanics - Dynamics ☐ |
| **Year 2** | | | | |
| S 1 | MATHS 2106 Differential Equations for Engineers II ☐ | MECH ENG 2100 Design Practice ☐ | MECH ENG 2021 Thermo-Fluids I ☐ | ANAT SC 1102 Human Anatomy and Physiology IA ☐ |
| S 2 | MATHS 2107 Statistics & Numerical Methods II ☐ | MECH ENG 2002 Stress Analysis & Design ☐ | MECH ENG 2019 Dynamics & Control I ☐ | MECH ENG 2101 Mechatronics IM ☐ |
| **Year 3** | | | | |
| S 1 | ENG 3005 Research Methods & Project Management ☐ | MECH ENG 3102 Heat Transfer & Thermodynamics ☐ | MECH ENG 3026 Advanced Mechanics of Materials ☐ | MECH ENG 3112 Sports Engineering ☐ |
| S 2 | ENG 3004 Systems Engineering & Industry Practice ☐ | MECH ENG 3111 Acoustics and Vibrations ☐ | MECH ENG 3101 Applied Aerodynamics ☐ | Elective Year 3 (see elective table) ☐ |
| **Internship** | | | | |
| All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship during the course of their studies – see note on page 2. | | | | |
| **Year 4** | | | | |
| S 1 | ENG 4001A Research Project Part A ☐ | MECH ENG 4104 Advanced Topics in Fluid Mechanics ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ |
| S 2 | ENG 4001B Research Project Part B ☐ | MECH ENG 4101 Biomechanical Engineering ☐ | Elective Year 4 (see elective table) ☐ | Elective Year 4 (see elective table) ☐ |

| Core Course | Major course | Elective (see table) |
|---|---|---|

**NOTES**

^ Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering.

## Mechanical Engineering Electives

Not all Majors and Double Degrees permit electives in every semester slot.

| | | | | | |
|---|---|---|---|---|---|
| **Year 2** | | | | | |
| **S1** | MECH ENG 2020 | Materials & Manufacturing | | | |
| **Year 3** | | | | | |
| **S1** | MECH ENG 3026 | Advanced Mechanics of Materials | **S2** | MECH ENG 3032 | Micro-Controller Programming |
| | MECH ENG 3100 | Aeronautical Engineering | | MECH ENG 3101 | Applied Aerodynamics |
| | MECH ENG 3103 | Advanced Manufacturing Systems | | MECH ENG 3104 | Space Vehicle Design |
| | MECH ENG 3106 | Mechatronics II | | ELEC ENG 2106 | Vector Calculus & Electromagnetics |
| | MECH ENG 3112 | Sports Engineering | | ELEC ENG 3112 | Electric Drive Systems M |
| | | | | ENG 3305 | Human Factors for Decision Making |
| | | | | ENTREP 3900 | eChallenge |
| **WIN** | PROJMGNT 3030 | Project Logistics and Supply Chains | | | |
| **Year 4** | | | | | |
| **S1** | MECH ENG 4064 | Renewable Power Technologies | **S2** | MECH ENG 4100 | Advanced Topics in Aerospace Engineering |
| | MECH ENG 4080 | Modern Control Systems | | MECH ENG 4101 | Biomechanical Engineering |
| | MECH ENG 4104 | Advanced Topics in Fluid Mechanics | | MECH ENG 4102 | Advanced PID Control |
| | MECH ENG 4106 | Aerospace Propulsion | | MECH ENG 4105 | Advanced Vibrations |
| | MECH ENG 4111 | CFD for Engineering Applications | | MECH ENG 4107 | Air conditioning |
| | MECH ENG 4112 | Combustion Technologies & High Temperature Processes | | MECH ENG 4108 | Aircraft Design |
| | MECH ENG 4118 | Finite Element Analysis of Structures | | ~~MECH ENG 4123~~ | ~~Advanced Digital Control~~ (*not running in 2022*) |
| | MECH ENG 4121 | Materials Selection & Failure Analysis | | ENG 3201 | Essentials of Humanitarian Practice |
| | MECH ENG 4124 | Robotics M | | ENG 4020 | Complex Systems Engineering |
| **SUM** | MECH ENG 4115 | Engineering Acoustics | | | |
| | MECH ENG 4126 | Topics in Welded Structures | | | |

# Mechanical Engineering Minors

Minors are undertaken by taking 12 units of courses within one of the following streams to replace the electives offered listed on the previous page. If they are not listed on the previous page, the courses below cannot contribute as Mechanical Engineering electives unless the full 12-unit Minor is awarded.

## Humanitarian Engineering Minor

One course of each labelled **A**, **B**, **C**, **D** must be taken.

| Summer | | | Winter | | |
|---|---|---|---|---|---|
| **A** | SPATIAL 3007WT | GIS for Environmental Management III | **A**<br>**B** | SPATIAL 3020WT<br>PROJMGMT 3030 | GIS for Agriculture & Natural Resource III<br>Project Logistics and Supply Chains |
| **Semester 1** | | | **Semester 2** | | |
| **C** | DEVT 2100 | Poverty and Social Development | **C**<br>**D** | DEVT 2101<br>ENG 3201 | Empowerment & Development: Community & Gender<br>Essentials of Humanitarian Practice |

## Entrepreneurship Minor

One course of each labelled **A**, **B**, **C**, **D** must be taken.

| | | | Summer | | |
|---|---|---|---|---|---|
| | | | **A** | ENTREP 3000 | Innovation and Creativity |
| **Semester 1** | | | **Semester 2** | | |
| **B**<br>**C** | ENTREP 3901<br>ENTREP 3015 | Tech eChallenge<br>Entrepreneurial Leadership | **A**<br>**B**<br>**D** | ENTREP 3000<br>ENTREP 3900<br>ENTREP 3011 | Innovation and Creativity<br>eChallenge<br>Startup Methodologies |