#### **Engineering**

# Bachelor of Engineering (Honours) (3707)

# Mechatronic Engineering (MTRNAH)

### T1 Entry 2024 Sample Plan



| Year 1    |   | Year 2    |   | Year 3    |   | Year 4    |   |
|-----------|---|-----------|---|-----------|---|-----------|---|
| Term<br>1 | <b>DESN1000</b> Engineering Design and Innovation                   | Term<br>1 | MATH2019 Engineering Mathematics 2E<br><u>OR</u><br>MATH2018 Engineering Mathematics 2D | Term<br>1 | MMAN3200<br>Linear Systems and Control                        | Term<br>1 | MTRN3020<br>Modelling and Control of Mechatronic<br>Systems |
|           | PHYS1121 Physics 1A <u>OR</u><br>PHYS1131 Higher Physics 1A         |           | MATH2089 Numerical Methods and Statistics   |           | Discipline Elective Course                                    |           | MTRN4010<br>Advanced Autonomous Systems                     |
|           | MATH1131 Mathematics 1A <u>OR</u><br>MATH1141 Higher Mathematics 1A |           | ELEC2141<br>Digital Circuit Design  |           | Free Elective Course  |           | <b>MMAN4951</b> (4 UoC)<br>Research Thesis A                |
|           | MATH1231 Mathematics 1B <u>OR</u><br>MATH1241 Higher Mathematics 1B | Term<br>2 | COMP1531<br>Software Engineering Fundamentals   | Term<br>2 | MTRN3100<br>Robot Design                                      | Term<br>2 | MTRN4230<br>Robotics  |
| Term<br>2 | MMAN1130 Design and Manufacturing                                   |           | MMAN2300<br>Engineering Mechanics 2   |           | <b>DESN3000</b> Strategic Design Innovation                   |           | Free Elective Course  |
|           |   |           | ENGG2400*<br>Mechanics of Solids 1  |           | General Education Course                                      |           | <b>MMAN4952</b> (4 UoC)<br>Research Thesis B                |
|           | COMP1511<br>Programming Fundamentals                                | Term<br>3 | <b>DESN2000</b> Engineering Design and Professional Practice                            | Term<br>3 | MTRN3500<br>Computing Applications in Mechatronics<br>Systems | Term<br>3 | General Education Course                                    |
| Term<br>3 | ENGG1300<br>Engineering Mechanics                                   |           | MTRN2500<br>Computing for Mechatronic Engineers   |           | Discipline Elective Course                                    |           | Discipline Elective Course                                  |
|           | ELEC1111<br>Electrical Circuit Fundamentals                         |           |   |           |   |           | MMAN4953 (4 UoC)<br>Research Thesis C                       |

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Compulsory Training Component: There is a program requirement of 60 days approved Industrial Training ENGG4999

\*ENGG2400 or ENGG2500 (Term 1 or 3) or MMAN2700 (Term 1)

At least 6 UOC of discipline electives must be chosen from the "recommended elective list" in the handbook.

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### T2 Entry 2024 Sample Plan



| Year 1    |   | Year 2    |   | Year 3    |   | Year 4    |   |
|-----------|---|-----------|---|-----------|---|-----------|---|
| Term<br>2 | PHYS1121 Physics 1A <u>OR</u><br>PHYS1131 Higher Physics 1A         | Term<br>2 | COMP1531<br>Software Engineering Fundamentals   | Term<br>2 | MMAN2300<br>Engineering Mechanics 2                           | Term<br>2 | <b>MTRN3100</b><br>Robot Design                             |
|           | MATH1131 Mathematics 1A <u>OR</u><br>MATH1141 Higher Mathematics 1A |           | MATH2019 Engineering Mathematics 2E<br><u>QR</u><br>MATH2018 Engineering Mathematics 2D |           | <b>DESN3000</b><br>Strategic Design Innovation                |           | MTRN4230<br>Robotics  |
|           | MMAN1130 Design and Manufacturing                                   |           | ENGG2400*<br>Mechanics of Solids 1  |           | General Education Course                                      |           | <b>MMAN4951</b> (4 UoC)<br>Research Thesis A                |
| Term<br>3 | <b>DESN1000</b> Engineering Design and Innovation                   | Term<br>3 | MATH2089<br>Numerical Methods and Statistics  | Term<br>3 | MTRN3500<br>Computing Applications in Mechatronics<br>Systems | Term<br>3 | Discipline Elective Course                                  |
|           | COMP1511<br>Programming Fundamentals                                |           | <b>DESN2000</b> Engineering Design and Professional Practice                            |           | Free Elective Course  |           | Discipline Elective Course                                  |
|           | ENGG1300<br>Engineering Mechanics                                   |           | MTRN2500<br>Computing for Mechatronic Engineers   |           | General Education Course                                      |           | <b>MMAN4952</b> (4 UoC)<br>Research Thesis B                |
| Term<br>1 | ELEC1111<br>Electrical Circuit Fundamentals                         | Term<br>1 | <b>ELEC2141</b><br>Digital Circuit Design   | Term<br>1 | MMAN3200<br>Linear Systems and Control                        | Term<br>1 | MTRN3020<br>Modelling and Control of Mechatronic<br>Systems |
|           | MATH1231 Mathematics 1B <u>OR</u><br>MATH1241 Higher Mathematics 1B |           | Free Elective Course  |           | Discipline Elective Course                                    |           | MTRN4010<br>Advanced Autonomous Systems                     |
|           |   |           |   |           |   |           | MMAN4953 (4 UoC)<br>Research Thesis C                       |

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#### **Engineering**

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### T3 Entry 2024 Sample Plan



| Year 1    |   | Year 2    |   | Year 3    |   | Year 4    |   |
|-----------|---|-----------|---|-----------|---|-----------|---|
| Term<br>3 | PHYS1121 Physics 1A <u>OR</u><br>PHYS1131 Higher Physics 1A         | Term<br>3 | ENGG1300<br>Engineering Mechanics   | Term<br>3 | MTRN2500<br>Computing for Mechatronic Engineers | Term<br>3 | MTRN3500<br>Computing Applications in Mechatronics<br>Systems |
|           | MATH1131 Mathematics 1A <u>OR</u><br>MATH1141 Higher Mathematics 1A |           | MATH2019 Engineering Mathematics 2E<br><u>OR</u><br>MATH2018 Engineering Mathematics 2D |           | Free Elective Course                            |           | Discipline Elective Course                                    |
|           | COMP1511<br>Programming Fundamentals                                |           | <b>DESN2000</b> Engineering Design and Professional Practice                            |           | General Education Course                        |           | <b>MMAN4951</b> (4 UoC)<br>Research Thesis A                  |
| Term<br>1 | <b>DESN1000</b> Engineering Design and Innovation                   | Term<br>1 | COMP1531<br>Software Engineering Fundamentals   | Term<br>1 | MMAN3200<br>Linear Systems and Control          | Term<br>1 | MTRN3020<br>Modelling and Control of Mechatronic<br>Systems   |
|           | ELEC1111<br>Electrical Circuit Fundamentals                         |           | <b>ELEC2141</b><br>Digital Circuit Design   |           | General Education Course                        |           | MTRN4010<br>Advanced Autonomous Systems                       |
|           | MATH1231 Mathematics 1B <u>OR</u><br>MATH1241 Higher Mathematics 1B |           | MATH2089<br>Numerical Methods and Statistics  |           | Discipline Elective Course                      |           | <b>MMAN4952</b> (4 UoC)<br>Research Thesis B                  |
| Term<br>2 | Free Elective Course  | Term<br>2 | MMAN2300<br>Engineering Mechanics 2   | Term<br>2 | <b>MTRN3100</b><br>Robot Design                 | Term<br>2 | MTRN4230<br>Robotics  |
|           | MMAN1130 Design and Manufacturing                                   |           | <b>ENGG2400*</b><br>Mechanics of Solids 1   |           | <b>DESN3000</b> Strategic Design Innovation     |           | Discipline Elective Course                                    |
|           |   |           |   |           |   |           | <b>MMAN4953</b> (4 UoC)<br>Research Thesis C                  |

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