Year 4

(i) Students not attending the Professional Engineering Placement Semester (PEPS)

METR3200	2	Introduction to Control

and at least #4 from —

ENGG4011	6	Professional Engineering Project
MECH4500[1]	4	Engineering Thesis
MECH4501[2]	4	Engineering Thesis
MECH4552	4	Major Design Project

OR

(ii) Students attending the Professional Engineering Placement Semester (PEPS)

ENGG4010	2	Professional Development
ENGG4011	6	Professional Engineering Project

Part B — Electives

B1 — Introductory Electives

CHEM1020	2	General Chemistry
CSSE1001	2	Introduction to Software Engineering I
ELEC1000	2	Introduction to Electrical Engineering
MINE1100	2	Sustainable Development of Resources
MATH1050[6]	2	Mathematical Foundations
PHYS1002	2	Electromagnetism, Optics, Relativity & Quantum Physics I

B2 — Advanced Electives

MECH3250	2	Engineering Acoustics
MECH4301	2	Materials Selection
MECH4310[7]	2	Mechanics of Composites
MECH4450	2	Aerospace Propulsion
MECH4460	2	Energy & Environment
MECH4470	2	Hypersonics & Rarefied Gas Dynamics
MECH4480	2	Computational Fluid Dynamics
MECH4552	4	Major Design Project
MECH4800	2	Space Engineering
METR3100	2	Sensors & Actuators
METR4202	2	Advanced Control & Robotics

Double Major

Students are required to obtain at least #10 from the courses listed below. Students participating in PEPS or CEED programs and undertaking #6 ENGG4011 are only required to obtain an additional #8.

MECH4450	2	Aerospace Propulsion
MECH4470	2	Hypersonics & Rarefied Gas Dynamics
MECH4480	2	Computational Fluid Dynamics
MECH4552	4	Major Design Project
MECH4800	2	Space Engineering
PHYS1002	2	Electromagnetism, Optics, Relativity & Quantum Physics I
PHYS2082	2	Space Science & Astrophysics II

Mechatronic Engineering

Students must complete for BE (Mechatronic Engineering), #64 comprising —

1. One of the following —
   - a major — #50, comprising #38 being all compulsory courses listed in Part A of the Mechatronic Engineering list, plus #12 from Part B Electives list, including at least —
     - #4 of introductory electives chosen from Group 1;
     - #4 of introductory electives chosen from Group 2;
     - #2 of advanced electives chosen from Group 1;
     - #2 of advanced electives chosen from Group 2; or
   - a double major — #60, comprising a major, plus an additional #10 as set out in Part B Electives under Double Major; or
   - a major and a minor — #60, comprising a major, plus an additional #10 as set out in Part B Electives under the approved minor field; and
2. balance from electives —
   - with a maximum of #8 of level one courses; and
   - students are encouraged to choose their electives from Part B electives. Selection of courses which are not in the BE list require the approval of the Executive Dean.

Part A — Compulsory

Year 1, Semester 1

ELEC1000	2	Introduction to Electrical Engineering
ENGG1000	2	Introduction to Professional Engineering
MATE1000	2	Physics & Engineering of Materials

Year 1, Semester 1 or 2

MATH1051[6]	2	Calculus & Linear Algebra I

Year 1, Semester 2

CSSE1000	2	Introduction to Computer Systems
ENGG1010	2	Applied Mechanics
MATH1052	2	Multivariate Calculus & Ordinary Differential Equations

Year 1, Semester 2 or Year 2, Semester 1

CSSE1001	2	Introduction to Software Engineering I

Year 2, Semester 1

MATH2000	2	Calculus & Linear Algebra II
MECH2300	2	Structures & Materials
METR2800	2	Mechatronic System Design Project I

Year 2, Semester 2

ELEC2004	2	Circuits, Signals & Systems
MATH2010	1	Analysis of Ordinary Differential Equations
MECH2210	2	Dynamics & Orbital Mechanics
STAT2202	1	Probability Models for Engineering & Science

Year 3, Semester 1

METR3200	2	Introduction to Control Systems

Year 3, Semester 2

METR3800	2	Mechatronic System Design Project II
METR4202	2	Advanced Control & Robotics

University Provider Number: 00025B

Year 4, Whole Year

[METR4900[1]	4	Thesis/Design Project
[or		
[METR4901[2]	4	Thesis/Design Project

Part B — Electives

B1 — Introductory Electives

Group 1

MECH2100	2	Machine Element Design
MECH2410	2	Fundamentals of Fluid Mechanics
MECH2700	2	Engineering Analysis I
MECH3200	2	Advanced Dynamics & Vibrations
MECH3300	2	Finite Element Method & Fracture Mechanics

Group 2

COMP2303	2	Network & Operating Systems Principles
COMS3100	2	Introduction to Communications
CSSE2000	2	Introduction to Digital Systems
CSSE2002	2	Programming in the Large
ELEC2003	2	Electromechanics & Electronics
ELEC3600	2	Signal & Image Processing I

B2 — Advanced Electives

Group 1

MECH3100	2	Mechanical & Space Systems Design
MECH3250	2	Engineering Acoustics
MECH3410	2	Fluid Mechanics
MECH3750	2	Engineering Analysis II
MECH4310[7]	2	Mechanics of Composites

Group 2

COMP3300	2	Operating Systems
COMP3702	2	Artificial Intelligence
COMS4100	2	Advanced Digital Communications
CSSE3000	2	Digital System Design I
ELEC4400	2	Advanced Electronic & Power Electronics Design
ELEC4600	2	Signal & Image Processing II

B3 — Coverage Electives

COMP2304	2	Programming for Engineering Systems
COMP3201	2	Computer Graphics
COMP3202[7]	2	Modelling & Visualisation
COMP4809	2	Research Methods
ELEC3002	2	Computational Techniques in Electrical Engineering
ELEC3400	2	Electronic Circuits
ELEC4002	2	Systems Modelling
ENGG4000	2	Introduction to Systems Engineering
ENGG4010	2	Professional Development
METR3100	2	Sensors & Actuators
METR4910	2	Project Management
PHYS2180	2	Principles of Sensor Technology

B4 — Other Electives

MATH1050[6]	2	Mathematical Foundations

Double Major

Students enrolled in the double major are required to obtain the major, plus an additional #10 from introductory, advanced, or coverage electives listed in Part B.

Minor

Students enrolled in a minor field of study are required to obtain the major, plus an additional #10 as set out below for the minor.

Students enrolled in the Biomedical Engineering minor are required to obtain at least #10 from the courses listed below, including #6 from Group A and #4 from Group B —

Group A

ELEC3401[8]	2	Biomedical & Industrial Instrumentation
ELEC4601	2	Medical Imaging I
ELEC4602	2	Medical Imaging II

Group B

BIOL1014	2	Molecular & Microbial Biology
BIOL1015	2	Human Biology
BIOM2007	2	Human Physiology
BIOM2008	2	Integrative Physiology
BIOM2019	2	Human Anatomy
CHEE3305	2	Biomaterials: Materials in Medicine
CHEM1020	2	General Chemistry
[CHEM1013	2	Chemistry 1B
[or		
[CHEM1030	2	Chemical Bonding & Organic Chemistry
HMST1900	2	Biophysical Foundations of Human Movement
PHYS2170	2	Biophysics

Minerals Process Engineering

No new enrolments from 2006

Students must complete for the BE (Minerals Process Engineering), #64 comprising —

1. One of the following —
   - a major — #50, comprising #48 being all compulsory courses listed in Part A of the Minerals Process Engineering list, plus #2 from advanced electives or minors listed in Part B Electives; or
   - a double major — #60, comprising a major, plus an additional #10 as set out in Part B Electives under Double Major; or
   - a major and a minor — #60, comprising a major, plus an additional #10 as set out in Part B Electives under the approved minor fields; and
2. balance from electives —
   - with a maximum of #8 of level one courses;
   - students are encouraged to seek academic advice for courses chosen that are not listed in Part B Electives. Selection of courses which are not in the BE List require the approval of the Dean.

Part A — Compulsory

Year 1, Semester 1

CHEM1020	2	General Chemistry
ENGG1000	2	Introduction to Professional Engineering

Year 1, Semester 1 or 2

MATE1000	2	Physics & Engineering of Materials
MATH1051[6]	2	Calculus & Linear Algebra I