

(Unit list as of 14th Oct 2025)

**First Year / Common Engineering 2026**

Unit Code	Unit Title	Credit Point	Sem 1	Sem 2	Oct Intake	Summer	Remarks
ENG1011	Engineering Methods	6	Yes	Yes	Yes		
ENG1012	Engineering Design	6	Yes	Yes			
ENG1013	Engineering Smart Systems	6	Yes	Yes	Yes		
ENG1014	Engineering Numerical Analysis	6	Yes	Yes			
ENG1005	Engineering Mathematics	6	Yes	Yes	Yes		
ENG1090	Foundation mathematics	6	Yes	Yes	Yes		
PHS1002	Physics for engineering	6	Yes				
CHM1051	Chemistry 1 advanced	6	Yes	Yes	Yes		Recommended elective for Chemical Engineering
FIT1045	Introduction to programming	6	Yes	Yes	Yes		Compulsory elective for Software Engineering
FIT1056	Introduction to software engineering	6	Yes	Yes			Recommended elective for Software Engineering
ENG1811	Engineering Industry 4.0 Design	6	Yes				
ENG1812	Leadership and entrepreneurship	6		Yes	Yes		
ENG1813	Next-Gen uncrewed vehicle	6				Yes	
ENG1021	Spatial communication in engineering	6	Yes	Yes			Recommended elective for Civil Engineering
BIO1011	Blueprints for life	6	Yes	Yes			Compulsory elective for Biomedical Engineering
ENG2005	Advanced engineering mathematics	6	Yes	Yes			

## Chemical Engineering 2026

Unit Code	Unit Title	Credit Point	Sem 1	Sem 2	Summer	Remarks
CHE2161	Mechanics of fluids	6		Yes		
CHE2162	Material and energy balances	6		Yes		
CHE2163	Heat and mass transfer	6		Yes		
CHE2166	Introduction to process simulation	6		Yes		
CHE2164	Thermodynamics I	6	Yes			
CHE2873	Introduction to Chemical Processes	6	Yes			
CHE2167	Process material selection	6	Yes			
CHE2871	Biochemistry for engineers	6	Yes			
CHE3162	Process control	6		Yes		
CHE3164	Reaction engineering	6		Yes		
CHE3166	Process design	6		Yes		
CHE3171	Bioprocess technology	6		Yes		
CHE3172	Nanotechnology and materials I	6		Yes		
CHE3161	Chemistry and chemical thermodynamics	6	Yes			
CHE3165	Separation processes	6	Yes			
CHE3167	Transport phenomena & numerical methods	6	Yes			
CHE3163	Sustainable processing I	6	Yes			
CHE3873	Pilot plant project	6	Yes	Yes		**Only for selected students
ENG4701	Final year project A	6	Yes	Yes		
ENG4702	Final year project B	6	Yes	Yes		
CHE4170	Design project	12		Yes		
CHE4171	Biochemical engineering	6		Yes		
CHE4172	Nanotechnology and materials 2	6		Yes		
CHE4161	Engineer in society	6	Yes			
CHE4173	Sustainable processing 2	6	Yes			
CHE4162	Particle technology	6	Yes			
CHE4803	Carbon capture, storage and utilisation	6	Yes			
CHE5833	Carbon capture, storage and utilisation	6	Yes			new Level 5 unit

CHE4806	Low carbon technology	6	Yes			new minor/elective
CHE5806	Low carbon technology	6	Yes			new Level 5 unit
CHE4807	Carbon footprint and energy management	6		Yes		new minor/elective
CHE5807	Carbon footprint and energy management	6		Yes		new Level 5 unit
CHE5805	Waste management and biomass transformation	6		Yes		

## Civil Engineering 2026

Unit Code	Unit Title	Credit Point	Sem 1	Sem 2	Summer	Remarks
CIV2206	Structural mechanics	6	Yes			
CIV2235	Structural materials	6		Yes		
CIV2242	Geomechanics 1	6		Yes		
CIV2263	Water systems	6	Yes			
CIV2282	Transport and traffic engineering	6	Yes			
CIV2283	Civil engineering construction	6	Yes			
CIV3221	Building structures and technology	6		Yes		
CIV3247	Geomechanics 2	6		Yes		
CIV3283	Road engineering	6		Yes		
CIV3285	Engineering hydrology	6	Yes			
CIV3294	Structural design	6	Yes			
CIV4100	Autonomous vehicle systems	6	Yes			
CIV4212	Civil and environmental engineering practice	6		Yes		
CIV4234	Advanced structural analysis	6	Yes			
CIV4235	Advanced structural design			Yes		
CIV4248	Ground hazards engineering	6	Yes			
CIV4261	Integrated urban water management	6	Yes			
CIV4268	Water resources management	6		Yes		
CIV4280	Bridge design and assessment	6	Yes			
CIV4283	Transport planning					
CIV4284	Traffic systems	6		Yes		
CIV4288	Water treatment	6		Yes		
CIV4802	Electric mobility	6		Yes		
CIV4803	Smart urban mobility and digital twins	6		Yes		
ENG4701	Final year project A	6	Yes	Yes		
ENG4702	Final year project B	6	Yes	Yes		
ENG4801	Professional practice (Curriculum embedded)	6	Yes			
MEC3459	Materials selection for engineering design	6		Yes		

## Electrical and Computer Systems Engineering 2026

Unit Code	Unit Title	Credit Point	Sem 1	Sem 2	Summer	Remarks
ECE2071	Computer organisation and programming	6	Yes			
ECE2072	Digital systems	6		Yes		
ECE2191	Probability models in engineering	6		Yes		
ECE3121	Engineering electromagnetics	6		Yes		
ECE2111	Signals and systems	6		Yes		
ECE2131	Electrical circuits	6	Yes			
ECE3121	Engineering electromagnetics	6		Yes		
ECE3141	Information and Network	6	Yes			
ECE3073	Computer Systems	6	Yes			
ECE4132	Control system design	6		Yes		
ECE4808	Organic electronics and micro devices	6		Yes		
ECE4809	Solid state lighting	6		Yes		
ECE4810	Internet of Things: Communication, Data and Security	6		Yes		
ECE4078	Intelligent robotics	6		Yes		
ECE3161	Analogue electronics	6		Yes		
ECE4076	Computer vision	6	Yes			
ECE4179	Neural networks and deep learning	6	Yes	Yes		
ECE4063	Large Scale Digital Design	6	Yes			
ECE4191	Engineering integrated design	6		Yes		
ECE4053	Power system analysis	6		Yes		
ECE3051	Electrical energy systems	6	Yes			
ENG4701	Final year project A	6	Yes	Yes		
ENG4702	Final year project B	6	Yes	Yes		
ENG4801 (Curriculum Embedded)	Professional practice	6	Yes			
ECE4886	Smart Grids	6		Yes		

**Materials Engineering 2026 (2+2)**

Unit Code	Unit Title	Credit Point	Sem 1	Sem 2	Summer	Remarks
MTE 2101	Atomic-scale structure of materials	6	Yes			
MTE 2102	Phase equilibria and phase transformations	6	Yes			
MTE 2103	Mechanical properties of materials	6	Yes			
MTE 2201	Plastics and the planet: Health, impact and sustainability	6		Yes		
<i>MTE 2204</i>	Materials in a complex world 1: People, projects and data	6		Yes		

## Mechanical Engineering 2026

Unit Code	Unit Title	Credit Point	Sem 1	Sem 2	Summer	Remarks
MMA2001	Design 1	6	Yes			Replace MEC2402
MMA2002	Solid Mechanics 1	6	Yes			Replace MEC2403
MMA2003	Thermofluids 1	6		Yes		Replace MEC2404 & MEC2405
MMA2004	Dynamics I	6		Yes		Replace MEC2401
MMA2005	Modelling and Control	6		Yes		Replace MEC3457
MEC2811	Manufacturing Processes	6	Yes			
MEC3451	Fluid Mechanics 2	6	Yes			
MEC3455	Solid Mechanics	6	Yes			
MEC3456	Engineering Computational Analysis	6	Yes			
MEC3821	Introduction to Electric Vehicle Technology	6	Yes			
MEC3822	Artificial Intelligence in Manufacturing	6	Yes			
MEC3001	Material Properties and Selection	6		Yes		Replace MEC3459
MEC3416	Mechanical Design 2	6		Yes		
MEC3453	Mechanical Dynamics 2	6		Yes		
MEC3800	Introduction to Reliability Engineering	6		Yes		
MEC3831	Special projects in automotive design and build	6			Yes	Only for selected students
ENG4701	Final Year Project A	6	Yes	Yes		
ENG4702	Final Year Project B	6	Yes	Yes		
ENG4801	Professional Practice (Curriculum embedded)	6	Yes			
MEC4408	Thermodynamics 2 and Heat transfer	6	Yes			
MEC4801	Non-destructive Testing and Inspection	6	Yes			
MEC4803	Sustainable Combustion Technologies	6	Yes			
MEC4407	Mechanical Design 3	6		Yes		
MMA4001	Finite Element Analysis	6		Yes		Replace MEC4426
MEC4417	Refrigeration and Air Conditioning	6		Yes		
MEC5885	Energy Efficiency and Sustainability Engineering	6	Yes			
MEC5886	Sustainable Energy Technologies	6		Yes		
MEC5801	Industrial Ecology	6		Yes		
MEC5897	Lean Manufacturing	6		Yes		
MEC5891	Design for Additive Manufacturing	6	Yes			
MEC5156	Advanced Robotics in Manufacturing	6		Yes		

## Robotics and Mechatronics Engineering 2026

Unit Code	Unit Title	Credit Point	Sem 1	Sem 2	Summer	Remarks
TRC2001	Introduction to systems engineering	6		Yes		
TRC2201	Mechanics	6		Yes		Replaced with MMA2004
TRC3200	Dynamical systems	6	Yes			
TRC3600	Modelling and control	6		Yes		Replaced with MMA2005
ECE4078	Intelligent robotics	6		Yes		
TRC4802	Thermo-fluids & Power Systems	6		Yes		Replaced with MMA2003
TRC3500	Sensors and artificial perception	6	Yes			
TRC4800	Robotics	6	Yes			
TRC4407	Automation Design Project	6		Yes		Capstone unit
TRC4200	Engineering cyber-physical systems	6	Yes			
TRC4902	Mechatronics and manufacturing	6		Yes		
ECE5179	Neural networks and deep learning	6		Yes		Master's unit, night classes.
ENG4701	Final year project A	6	Yes	Yes		
ENG4702	Final year project B	6	Yes	Yes		
ENG4801 (Curriculum Embedded)	Professional practice	6	Yes			

## Software Engineering 2026

Unit Code	Unit Title	Credit Point	Sem 1	Sem 2	Summer	Remarks
FIT2101	Software engineering process and management	6		Yes		Core
FIT2107	Software quality and testing	6		Yes		Core
FIT2085	Introduction to computer science for engineers	6	Yes	Yes		Core
FIT2099	Object oriented analysis, design & implementation	6	Yes	Yes		Core
MAT1830	Foundations of computing	6	Yes	Yes		Core
FIT2004	Algorithms & data structures	6	Yes	Yes		Core
FIT2100	Operating systems	6		Yes		Core
FIT3170	Software engineering practice	12	Yes	Yes		Core, FY
FIT3077	Software engineering architecture & design	6	Yes			Core
FIT3171	Databases	6	Yes	Yes		Core
FIT3159	Computer architecture	6	Yes			Core
FIT4002	Software engineering studio project	12	Yes	Yes		Core, FY
FIT4165	Computer networks	6	Yes			Core
FIT4701	Final year project A	6	Yes	Yes		Core
FIT4702	Final year project B	6	Yes	Yes		Core
FIT3003	Business intelligence and data warehousing	6		Yes		SE Technical Elective
FIT3080	Artificial Intelligence	6		Yes		SE Technical Elective
FIT3134	Entrepreneurship	6			Summer A	SE Technical Elective
FIT3143	Parallel computing	6		Yes		SE Technical Elective
FIT3152	Data analytic	6	Yes			SE Technical Elective
FIT3155	Advanced data structures and algorithms	6	Yes	Yes		SE Technical Elective
FIT3175	Usability	6			Summer B	SE Technical Elective
FIT3179	Data visualisation	6		Yes		SE Technical Elective
FIT3182	Big data management and processing	6	Yes			SE Technical Elective
FIT3183	Malicious AI and dark side security	6		Yes		SE Technical Elective
FIT4005	IT research methods	6	Yes	Yes		SE Technical Elective
FIT5145	Foundations of data science	6	Yes	Yes		SE Technical Elective
FIT5201	Machine learning	6	Yes	Yes		SE Technical Elective

FIT5202	Data processing for big data	6	Yes	Yes		SE Technical Elective
FIT5215	Deep learning	6		Yes		SE Technical Elective
FIT5217	Natural language processing	6	Yes			SE Technical Elective

Note: Students can take other year-1 and year-2 FIT units (not core) as their free electives.