

First Year / Common Engineering 2025

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
FIT1051	Programming fundamentals in java	6	Yes				Recommended elective for Software Engineering
FIT1047	Introduction to computer systems, networks and security	6	Yes				Recommended elective for Software Engineering
ENG1811	Engineering Industry 4.0 Design	6	Yes				
ENG1021	Spatial communication in engineering	6		Yes			Recommended elective for Civil Engineering
ENG2005	Advanced engineering mathematics	6	Yes	Yes			
FIT1056	Collaborative engineering for web applications	6		Yes			Recommended elective for Software Engineering

Chemical Engineering 2024

Unit Code	Unit Title	Credit Point	Semester 1	Semester 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			**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			
CHE4801	Chemical process technologies	6	Yes			
CHE5805	Waste management and biomass transformation	6		Yes		

Civil Engineering 2025

Unit Code	Unit Title	Credit Point	Semester 1	Semester 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					
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			
CIV4284	Traffic systems	6		Yes		
CIV4288	Water treatment	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			

Electrical and Computer Systems Engineering 2025

Unit Code	Unit Title	Credit Point	Sem 1	Sem 2	Oct Intake	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			
ECE4075	Real time embedded systems	6	Yes				
ECE4076	Computer vision	6	Yes				
ECE4179	Neural networks and deep learning	6	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				
ECE4032	Advanced control	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				

Mechanical Engineering 2025

Unit Code	Unit Title	Credit Point	Sem 1	Sem 2	Oct Intake	Summer	Remarks
MEC2401	Dynamics I	6	Yes				
MEC2402	Design Methods	6	Yes				
MEC2403	Mechanics of materials	6	Yes				
MEC2811	Manufacturing Processes	6	Yes				
MEC2404	Mechanics of fluids	6		Yes			
MEC2405	Thermodynamics	6		Yes			
MEC3451	Fluid mechanics II	6	Yes				
MEC3455	Solid mechanics	6	Yes				
MEC3456	Engineering computational analysis	6	Yes				
MEC3800	Introduction to Reliability Engineering	6	Yes				
MEC3416	Machine Design	6		Yes			
MEC3453	Dynamics II	6		Yes			
MEC3457	Systems and control	6		Yes			
MEC3459	Materials Selection for Engineering Design	6		Yes			
MEC3821	Introduction to Electric Vehicle Technology	6		Yes			
MEC3822	Artificial Intelligence in Manufacturing	6	Yes				
ENG4701	Final year project A	6	Yes	Yes			
ENG4702	Final year project B	6	Yes	Yes			
ENG4801	Professional practice	6	Yes				

	(Curriculum embedded)						
MEC4408	Thermodynamics and Heat transfer	6	Yes				
MEC4801	Non-destructive testing and inspection	6	Yes				
MEC4803	Internal combustion engines	6	Yes				
MEC4407	Design Project	6		Yes			
MEC4426	Computer-aided design	6		Yes			
MEC4417	Refrigeration and air conditioning	6		Yes			
MEC4444	Introduction to engineering acoustics	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 2025

Unit Code	Unit Title	Credit Point	Semester 1	Semester 2	October Intake	Remarks
TRC2001	Introduction to systems engineering	6		Yes		
TRC2201	Mechanics	6		Yes		
TRC3200	Dynamical systems	6	Yes			
TRC3600	Modelling and control	6		Yes		
TRC4802	Thermo-fluids & Power Systems	6		Yes		
TRC3500	Sensors and artificial perception	6	Yes			
ENG4701	Final year project A	6	Yes	Yes		
ENG4702	Final year project B	6	Yes	Yes		
TRC4800	Robotics	6	Yes			
TRC4407	Automation Design Project	6		Yes		New capstone unit to replace TRC3000
ENG4801	Professional practice	6	Yes			Professional Practice for

	(Curriculum embedded)					all engineering students.
TRC4200	Engineering cyber-physical systems	6	Yes			
TRC4902	Mechatronics and manufacturing	6		Yes		
TRC5901	Advanced artificial intelligence	6		Yes		Master's unit, night classes.
TRC5801	Operations and supply chain management	6	Yes			Master's unit, night classes.

Software Engineering 2025

Unit Code	Unit Title	Credit Point	Semester 1	Semester 2	October Intake / 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
FIT1058	Foundations of computing	6	Yes	Yes		Core This unit is to replace MAT1830
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		Yes		*May be offered in Summer
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		Yes			SE Technical Elective
FIT5202	Data processing for big data	6	Yes			SE Technical Elective
FIT5215	Deep learning	6		Yes		SE Technical Elective
FIT5216	Modelling discrete optimisation problems	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.						

Master of Applied Engineering 2025

Unit Code	Unit Title	Credit Point	Semester 1	Semester 2	October Intake	Remarks
ENG5805	Statistics and operations research for industrial engineers	6	Yes	Yes	No	
ENG5813	Industry-based project A	6	Yes	Yes	No	
ENG5814	Industry-based project B	6	Yes	Yes	No	
MEC5885	Energy efficiency and sustainability	6	Yes	Yes	No	
CIV5801	Green building	6	Yes	Yes	No	
MEC5801	Industrial ecology	6	Yes	Yes	No	

MEC5886	Sustainable energy technologies	6	Yes	Yes	No	
CHE5805	Waste management and biomass transformation	6	Yes	Yes	No	
TRC5801	Operations and supply chain management	6	Yes	Yes	No	
MEC5891	Design for additive manufacturing	6	Yes	Yes	No	
TRC5901	Applied artificial intelligence	6	Yes	Yes	No	
MEC5897	Lean manufacturing	6	Yes	Yes	No	
MEC5156	Advanced robotics in manufacturing	6	Yes	Yes	No	