

FACULTY OF ENGINEERING AND SCIENCE

Units Offered – Semesters 1 & 2, 2025

(Undergraduate Programme)

(Rev.07 – changes are highlighted in yellow and/or refer to last page for revision note)

Date: Friday, June 13, 2025

UNIT CODE	UNIT TITLE	SEM 1, 2025	SEM 2, 2025	REMARKS
DEPARTMENT: ENGINEERING FIRST YEAR HEAD OF DEPARTMENT: IR. DR TAN YEE YONG				
MATH1019	Linear Algebra and Statistics for Engineers	√	√	
INDE1001	Engineering Foundations: Principles, Design and Communication	√	√	
ELEN1000	Electrical Systems	√	√	
MCEN1000	Engineering Mechanics	√	√	
MATH1020	Calculus for Engineers	√	√	
PRRE1003	Resources, Processes and Materials Engineering	√	√	
COMP1005	Fundamentals of Programming	√	√	
ELEN1002	Sustainability and Renewable Energy	√	√	Optional Unit Optional Unit; Applies to students enrolled in Semester 2, 2024 onwards
GEOL1007	Planetary Science		√	
CHEM1000	Principles and Processes in Chemistry	√	√	
GEOL1005	Fundamentals of Geology		√	
CMPE1000	Hardware Fundamentals	√		
ISAD1000	Introduction to Software Engineering	√		
GEOL1008	Dynamic Earth	√		
SPAT1007	Fundamentals of Geographic Information Systems	√		
BLDG1004	Introduction to Management in Construction	√		
DEPARTMENT: CHEMICAL AND ENERGY ENGINEERING HEAD OF DEPARTMENT: PROF. IR. TS. STEPHANIE CHAN YEN SAN				
PROGRAMME: CHEMICAL ENGINEERING				
CHEN2002	Process Heat Transfer	√		
CHEM1000	Principles and Processes in Chemistry	√	√	
CHEN2000	Mass and Energy Balances	√	√	
ENGR2000	Fluid Mechanics	√		Common Engineering Unit
CHEN3010	Reaction Engineering	√		
CHEN3003	Process Synthesis and Design	√		
CHEN3009	Fluid and Particle Processes	√		
ENGR4000	Engineering Industry Research Project 1	√	√	
ENGR4001	Engineering Industry Research Project 2	√	√	
CHEN4001	Process Safety and Risk Management	√		
CHEN4012	Advanced Unit Operations	√		
CHEN2001	Thermodynamics		√	
CHEM1002	Reactivity and Function in Chemistry	√	√	
CHEN2003	Process Mass Transfer		√	
CHEN2004	Process Simulation and Data Analytics		√	
CHEN3001	Computational Transport Phenomena	√		
CHEN4016	Engineering Economics, Management and Sustainability		√	
CHEN3005	Process Instrumentation and Control		√	
CHEN4015	Chemical Engineering Design Project		√	
Specialisation Units Year 3 (please refer to Course Structure for list of specialisations offered):				
CHEN4020	Carbon Management	√		SPUE-TRENT Transitional Energy Technologies Specialisation
CHEN4017	Bioprocess Engineering		√	SPUE-TRENT Transitional Energy Technologies Specialisation
ENEN2001	Solid and Hazardous Waste Management	(please refer to unit availability under Environmental Engineering programme)		SPUE-WAWMG Water, Air and Waste Management Specialisation

UNIT CODE	UNIT TITLE	SEM 1, 2025	SEM 2, 2025	REMARKS
Specialisation Units Year 4 (please refer to Course Structure for list of specialisations offered):				
CHEN4010	Advanced Thermodynamics and Reactor Engineering		√	SPUE-ADMPR Advanced Materials and Processing Specialisation
CHEN4020	Carbon Management	√		SPUE-WAWMG Water, Air and Waste Management Specialisation
ENEN3000	Aerial Emissions and Abatement		√	SPUE-WAWMG Water, Air and Waste Management Specialisation
PROGRAMME: ENERGY ENGINEERING				
CHEN2000	Mass and Energy Balances	√		Shared unit with Chemical Engineering
ELEN2000	Electrical Circuits	√		Shared unit with Electrical and Electronic Engineering
CHEN2002	Process Heat Transfer	√		Shared unit with Chemical Engineering
ENGR2000	Fluid Mechanics	√		Common Engineering Unit
ENGR2002	Introduction to Energy Engineering		√	
CHEN2001	Thermodynamics		√	Shared unit with Chemical Engineering
ENGR2003	Sustainable Energy Systems Engineering		√	
MCEN2007	Mechanics for Energy Engineering		√	
PROGRAMME: PETROLEUM ENGINEERING				
PEEN3000	Formation Evaluation	√	√	
PEEN3001	Fundamentals of Reservoir Engineering	√		
PEEN3008	Advanced Reservoir Engineering		√	
PEEN3002	Petroleum Production Technology		√	
PEEN3005	Petroleum Geology and Geophysics	√		
PEEN4003	Advanced Drilling Engineering	√		
PEEN4004	Numerical Reservoir Simulation	√		
PEEN4011	Petroleum Field Development Planning		√	
DEPARTMENT: CIVIL AND CONSTRUCTION ENGINEERING HEAD OF DEPARTMENT: ASSOCIATE PROF. IR. DR WONG KWONG SOON				
PROGRAMME: CIVIL AND CONSTRUCTION ENGINEERING				
CSEN2000	Civil Engineering Construction Materials	√		
ENGR2000	Fluid Mechanics	√		Common Engineering Unit
CVEN2000	Civil Engineering Drawing and Surveying	√		
STEN2005	Structural Analysis of Determinate Structures	√		
TREN3001	Transportation Engineering and Earthworks	√		
GEOT3002	Geotechnical Engineering Analysis	√		
CVEN4003	Civil and Construction Engineering Research Project 1	√	√	
CVEN4004	Civil and Construction Engineering Research Project 2	√	√	
CSEN3002	Structural Actions and Steel Design	√		
CSEN4003	Civil Engineering Practices, Quality and Legislation	√		
STEN4003	Integrated Structural Design	√		
GEOT4002	Geotechnical Design and Modelling	√		
STEN4004	Advanced Structural Modelling	√		
STEN2006	Structural Analysis of Indeterminate Structures		√	
CVEN2001	Water and Environmental Resources		√	
STEN2004	Structural Mechanics		√	
GEOT2000	Principles of Geomechanics		√	
CSEN3000	Civil Engineering Project and Cost Management		√	
CVEN3002	Hydraulics and Hydrology		√	
CSEN3003	Reinforced Concrete Design		√	
CSEN4002	Integrated Design and Construction		√	
TREN4002	Traffic and Road Pavement Engineering		√	

UNIT CODE	UNIT TITLE	SEM 1, 2025	SEM 2, 2025	REMARKS
STEN4005	Advanced Concrete Design and Construction		√	
GEOT4003	Design of Foundations		√	
Specialisation Units Year 3 (please refer to Course Structure for list of specialisations offered):				
BLDG2013	Construction Plant and Equipment	√		SPUE-CONEN Construction Engineering Specialisation; SPUE-INFST Infrastructure Specialisation
TREN4002	Traffic and Road Pavement Engineering		√	SPUE-CONEN Construction Engineering Specialisation
STEN3003	Advanced Structural Analysis	√		SPUE-STENG Structural Engineering Specialisation; SPUE-INFST Infrastructure Specialisation
STEN4006	Structural Dynamics		√	SPUE-STENG Structural Engineering Specialisation; SPUE-INFST Infrastructure Specialisation
ENEN3009	Water and Environmental Engineering		√	SPUE-INFST Infrastructure Specialisation
STEN4005	Advanced Concrete Design and Construction		√	SPUE-INFST Infrastructure Specialisation
ENEN4014	Sustainable Urban Management and Planning		√	SPUC-SUENV Sustainable Environment Specialisation
CHEN2000	Mass and Energy Balances	√		SPUC-PROEN Process Engineering Specialisation (Specialisation offered by Department Chemical and Energy Engineering)
CHEN2004	Process Simulation and Data Analytics		√	SPUC-PROEN Process Engineering Specialisation (Specialisation offered by Department Chemical and Energy Engineering)
MXEN2003	Microcontroller Project	√		SPUC-ROBAU Robot Automation Specialisation (Specialisation offered by Mechanical Engineering)
MXEN3000	Mechatronics Design Project		√	SPUC-ROBAU Robot Automation Specialisation (Specialisation offered by Mechanical Engineering)
MCEN2003	Machine Dynamics	√		SPUC-MEDVB Mechanical Dynamics and Vibration Specialisation (Specialisation offered by Department Mechanical and Mechatronic Engineering)
MCEN2002	Fundamentals of Mechanical Design		√	SPUC-MEDVB Mechanical Dynamics and Vibration Specialisation (Specialisation offered by Department Mechanical and Mechatronic Engineering)
PROGRAMME: ENVIRONMENTAL ENGINEERING				
ENGR2000	Fluid Mechanics	√		Common Engineering Unit
ENEN2004	Water Resource Management and Treatment Principles	√		
ENEN2002	Energy Management and Climate Change	√		
ENST2005	Environmental Chemistry and Microbiology	√		
ENEN2003	Wastewater Treatment Principles and Design		√	
ENST2006	Environmental Monitoring and Analysis		√	
ENEN2001	Solid and Hazardous Waste Management		√	
GEOT2000	Principles of Geomechanics		√	Shared unit with Civil and Construction Engineering
ENST3000	Environmental Impact Assessment	√		
MGMT3000	Engineering Management and Professional Practice		√	Shared unit with Electrical and Computer Engineering
ENEN3000	Aerial Emissions and Abatement		√	
CVEN3002	Hydraulics and Hydrology		√	Shared unit with Civil and Construction Engineering
ENEN4009	Environmental Engineering Design	√		

UNIT CODE	UNIT TITLE	SEM 1, 2025	SEM 2, 2025	REMARKS
ENEN4006	Environmental Engineering Research Project 1	√	√	
ENEN4007	Environmental Engineering Research Project 2	√	√	
ENEN4004	Geoenvironmental Engineering		√	
ENEN4003	Environmental Integrated Design Project		√	
ENEN4008	Environmental Considerations in Construction	√		
Specialisation Units Year 3 (please refer to Course Structure for list of specialisations offered):				
ENEN4014	Sustainable Urban Management and Planning		√	SPUC-SUENV Sustainable Environment Specialisation
CHEN2000	Mass and Energy Balances	√		SPUC-PROEN Process Engineering Specialisation (Specialisation offered by Department Chemical and Energy Engineering)
CHEN2004	Process Simulation and Data Analytics		√	SPUC-PROEN Process Engineering Specialisation (Specialisation offered by Department Chemical and Energy Engineering)
MXEN2003	Microcontroller Project	√		SPUC-ROBAU Robot Automation Specialisation (Specialisation offered by Mechanical Engineering)
MXEN3000	Mechatronics Design Project		√	SPUC-ROBAU Robot Automation Specialisation (Specialisation offered by Mechanical Engineering)
CSEN2000	Civil Engineering Construction Materials	√		SPUC-CIVEN Civil Engineering Specialisation
STEN2005	Structural Analysis of Determinate Structures		√	SPUC-CIVEN Civil Engineering Specialisation
STEN2004	Structural Mechanics		√	SPUC-CIVEN Civil Engineering Specialisation
COMP1002	Data Structures and Algorithms	√		SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation (Specialisation offered by Electrical and Computer Engineering)
ISYS2014	Database Systems		√	SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation (Specialisation offered by Electrical and Computer Engineering)
Specialisation Units Year 4 (please refer to Course Structure for list of specialisations offered):				
CHEN4020	Carbon Management	√		SPUC-SUENV Sustainable Environment Specialisation
ENEN4013	Environmental, Social and Governance		√	SPUC-SUENV Sustainable Environment Specialisation
CHEN3009	Fluid and Particle Processes	√		SPUC-PROEN Process Engineering Specialisation (Specialisation offered by Department Chemical and Energy Engineering)
CHEN4001	Process Safety and Risk Management		√	SPUC-PROEN Process Engineering Specialisation (Specialisation offered by Department Chemical and Energy Engineering)
TREN3001	Transportation Engineering and Earthworks	√		SPUC-CIVEN Civil Engineering Specialisation
CSEN3000	Civil Engineering Project and Cost Management		√	SPUC-CIVEN Civil Engineering Specialisation
COMP3010	Machine Learning	√		SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation (Specialisation offered by Electrical and Computer Engineering)
COMP3009	Data Mining		√	SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation (Specialisation offered by Electrical and Computer Engineering)

UNIT CODE	UNIT TITLE	SEM 1, 2025	SEM 2, 2025	REMARKS
DEPARTMENT: ELECTRICAL AND COMPUTER ENGINEERING HEAD OF DEPARTMENT: DR. CHEW ING MING				
PROGRAMME: BACHELOR OF TECHNOLOGY (COMPUTER SYSTEMS AND NETWORKING)				
CMPE1000	Hardware Fundamentals	√		
COMP1007	Programming Design and Implementation	√	√	
MATH1019	Linear Algebra and Statistics for Engineers	√	√	Shared Unit with Engineering First Year
INDE1001	Engineering Foundations: Principles, Design and Communication	√	√	Shared Unit with Engineering First Year
CMPE2000	Data Communications and Network Management	√		
ELEN2002	Transmission and Interface Design	√		
ISEC2000	Fundamental Concepts of Cryptography	√		Optional Unit
ISEC2001	Fundamental Concepts of Data Security	√		Optional Unit / Elective Unit
COMP3001	Design and Analysis of Algorithms	√		Optional Unit
ICTE3002	Human Computer Interface	√		Optional Unit
ISAD1000	Introduction to Software Engineering	√		Optional Unit
COMP2003	Object Oriented Software Engineering	√		Elective Unit
CMPE3002	Computer Technology Project 1	√	√	
CMPE3003	Computer Technology Project 2	√	√	
COMP2006	Operating Systems	√		
CNCO3000	Distributed Networks	√		
COMT3002	Internet of Things Design and Communications	√		
COMP1002	Data Structures and Algorithms	√	√	
COMP2000	Computer Systems		√	
ETEN1000	Electronics		√	
ISYS2014	Database Systems		√	
COMP1000	Unix and C Programming		√	
CMPE2003	Microcomputers		√	
MGMT3000	Engineering Management and Professional Practice		√	
CMPE3001	Embedded Systems Engineering		√	
CMPE3004	Network Engineering		√	
ISEC3004	Cyber Crime and Security Enhanced Programming		√	Optional Unit
ISEC3005	Cyber Security – Intrusion Detection System and Incident Handling		√	Optional Unit
COMP2008	Mobile Application Development		√	Optional Unit
CMPE2002	Requirements Engineering		√	Elective Unit
ISEC1000	Cyber Security Concepts		√	Elective Unit
PROGRAMME: ELECTRICAL AND ELECTRONIC ENGINEERING				
ELEN2000	Electrical Circuits	√		
MATH2009	Calculus 2	√		
ETEN2001	Electronic Fundamentals	√		
CMPE2001	Foundations of Digital Design	√		
MXEN3004	Dynamic Modelling and Control	√		
ETEN3003	Power Electronics	√		
ELEN3002	Fundamentals of Engineering Electromagnetics		√	
EEET4000	Engineering Research Project 1	√	√	
EEET4002	Integrated Design Project	√		
ETEN4001	Industrial Automated Systems	√		
EEET4001	Engineering Research Project 2	√	√	
ELEN4006	Smart and Micro Grids	√		From the old course structure. Still offered in 2025 S1 (handbook)
ELEN4001	Electric Power Generation, Transmission and Distribution		√	From the old course structure. Still offered in 2025 S2 (handbook)
MGMT3000	Engineering Management and Professional Practice		√	
ETEN2000	Signals and Systems		√	
ELEN3004	Renewable Energy Principles		√	
CMPE2003	Microcomputers		√	
ELEN2005	Electrical Machines		√	
COMT3000	Communications Engineering		√	

UNIT CODE	UNIT TITLE	SEM 1, 2025	SEM 2, 2025	REMARKS
ELEN4007	Electrical Machines Drives and Control		√	
ELEN3001	Power System Analysis		√	
ETEN3004	Integrated Circuit Design		√	New Elective Unit. Under flexible minor specialisation for students who completed ETEN2001 Electronic Fundamentals. Note: This unit is not under the Electrical Engineering course structure.
Specialisation Units Year 3 (please refer to Course Structure for list of specialisations offered):				
ISEC2001	Fundamental Concepts of Data Security	√		SPUC-CYBSE Cybersecurity Specialisation
ISEC1000	Cyber Security Concepts		√	SPUC-CYBSE Cybersecurity Specialisation
ENEN4014	Sustainable Urban Management and Planning		√	SPUC-SUENV Sustainable Environment Specialisation (Specialisation offered by Environmental Engineering)
ENGR2000	Fluid Mechanics	√		SPUC-MESYS Mechanical Systems Specialisation (Specialisation offered by Mechanical and Mechatronic Engineering)
MCEN2001	Fundamentals of Thermodynamics		√	SPUC-MESYS Mechanical Systems Specialisation (Specialisation offered by Mechanical and Mechatronic Engineering)
COMP1002	Data Structures and Algorithms	√		SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation
ISYS2014	Database Systems		√	SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation
Specialisation Units Year 4 (please refer to Course Structure for list of specialisations offered):				
CHEN4020	Carbon Management	√		SPUC-SUENV Sustainable Environment Specialisation (Specialisation offered by Environmental Engineering)
ENEN4013	Environmental, Social and Governance		√	SPUC-SUENV Sustainable Environment Specialisation (Specialisation offered by Environmental Engineering)
CMPE2000	Data Communications and Network Management	√		SPUC-CYBSE Cybersecurity Specialisation
ISEC3005	Cyber Security- Intrusion Detection System and Incident Handling		√	SPUC-CYBSE Cybersecurity Specialisation
ISEC3002	Penetration Testing and Defence		√	SPUC-CYBSE Cybersecurity Specialisation
MCEN3002	Applied Fluid Mechanics		√	SPUC-MESYS Mechanical Systems Specialisation (Specialisation offered by Mechanical and Mechatronic Engineering)
COMP3010	Machine Learning	√		SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation
COMP3009	Data Mining		√	SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation
PROGRAMME: BACHELOR OF COMPUTING – SOFTWARE ENGINEERING MAJOR				
COMP1007	Programming Design and Implementation	√	√	
ISAD1000	Introduction to Software Engineering	√		
ISEC2001	Fundamental Concepts of Data Security	√		
NPSC1003	Integrating Indigenous Science and STEM	√		
CNCO2000	Computer Communications	√	√	
COMP2003	Object Oriented Software Engineering	√		
COMP2006	Operating Systems	√		
CMPE3008	Software Engineering Testing	√		
ISAD3000	Capstone Computing Project 1	√	√	
ICTE3002	Human Computer Interface	√		
COMP3001	Design and Analysis of Algorithms	√		
EIT301	Engineering Industrial Training	Year 2 Summer Semester (December)		

UNIT CODE	UNIT TITLE	SEM 1, 2025	SEM 2, 2025	REMARKS
ISEC2000	Fundamental Concepts of Cryptography	√		Elective Unit Y3 S1 (Normal Intake); Y3 S2 (Mid-Year)
COMP3010	Machine Learning	√		Elective Unit Y3 S1 (Normal Intake); Y3 S2 (Mid-Year)
CNCO3003	Mobile Cloud Computing	√		Elective Unit Y3 S1 (Normal Intake); Y3 S2 (Mid-Year)
COMP2002	Unix Systems Programming	√		Elective Unit Y3 S1 (Normal Intake); Y3 S2 (Mid-Year)
COMP1000	Unix and C Programming	√	√	
COMP1002	Data Structures and Algorithms	√	√	
ISYS2014	Database Systems		√	
MATH1019	Linear Algebra and Statistics for Engineers		√	Shared Unit with Engineering First Year
CMPE2002	Requirements Engineering		√	
COMP3008	Distributed Computing		√	
COMP2008	Mobile Application Development		√	
ISEC3004	Cyber Crime and Security Enhanced Programming		√	
ISAD3001	Capstone Computing Project 2	√	√	
COMP3003	Software Architecture and Extensible Design		√	
COMP1006	Foundations of Computer Science		√	Compulsory Elective
COMP2005	Computing Topics		√	Elective Unit Y3 S2 (Normal Intake)
COMP2000	Computer Systems		√	Elective Unit Y3 S2 (Normal Intake); Y1 S1 (Compulsory Elective: Mid-Year)
ISEC1000	Cyber Security Concepts		√	Elective Unit Y3 S2 (Normal Intake)
ISEC3005	Cyber Security- Intrusion Detection System and Incident Handling		√	Elective Unit Y3 S2 (Normal Intake)
PROGRAMME: BACHELOR OF COMPUTING – CYBER SECURITY MAJOR				
COMP1007	Programming Design and Implementation	√	√	
ISAD1000	Introduction to Software Engineering	√		
ISEC2001	Fundamental Concepts of Data Security	√		
NPSC1003	Integrating Indigenous Science and STEM	√		
CNCO2000	Computer Communications	√	√	
COMP2006	Operating Systems	√		
COMP2002	Unix Systems Programming	√		
ISEC2000	Fundamental Concepts of Cryptography	√		
CNCO3003	Mobile Cloud Computing	√		
COMP3010	Machine Learning	√		
ISAD3000	Capstone Computing Project 1	√	√	
ISAD3001	Capstone Computing Project 2	√	√	
COMP1000	Unix and C Programming	√	√	
COMP1002	Data Structures and Algorithms	√	√	
MATH1019	Linear Algebra and Statistics for Engineers	√	√	Shared Unit with Engineering First Year
ISEC1000	Cyber Security Concepts		√	
COMP2005	Computing Topics		√	
ISYS2014	Database Systems		√	
ISEC3004	Cyber Crime and Security Enhanced Programming		√	
ISEC3002	Penetration Testing and Defence		√	
ISEC3005	Cyber Security- Intrusion Detection System and Incident Handling		√	
EIT301	Engineering Industrial Training	Year 2 Summer Semester		
COMP2000	Computer Systems		√	Elective Y2 S1 (Mid-Year); Elective Y3 S2, Y2 S2 (Normal Intake)
COMP3003	Software Architecture and Extensible Design		√	Elective Y3 S2, Y2 S2 (Normal Intake)
ICTE3002	Human Computer Interface	√		Elective Y3 S1 (Normal Intake)
COMP3001	Design and Analysis of Algorithms	√		Elective Y3 S1 (Normal Intake)

UNIT CODE	UNIT TITLE	SEM 1, 2025	SEM 2, 2025	REMARKS
CMPE2002	Requirements Engineering		√	Elective Y2 S1 (Mid-Year) / Y2 S2; Y3 S2 (Normal Intake)
CMPE3008	Software Engineering Testing	√		Elective Y3 S1 (Normal Intake)
COMP2008	Mobile Application Development		√	Elective Y2 S1 (Mid-Year) / Y2 S2; Y3 S2 (Normal Intake)
COMP2003	Object Oriented Software Engineering	√		Elective Y3 S1 (Normal Intake)
DEPARTMENT: MECHANICAL AND MECHATRONIC ENGINEERING HEAD OF DEPARTMENT: ASSOCIATE PROF. DR MOOLA MOHAN REDDY				
PROGRAMME: MECHANICAL ENGINEERING				
ENGR2000	Fluid Mechanics	√		Common Engineering Unit
MCEN2000	Fundamentals of Strength of Materials	√		
MCEN2003	Machine Dynamics	√		
MCEN2006	Computer Aided Drawing and Engineering Modelling	√		
ENGR2001	Ethics and Sustainability in Engineering		√	
MCEN2004	Manufacturing Processes		√	
MCEN2002	Fundamentals of Mechanical Design		√	
MCEN2001	Fundamentals of Thermodynamics		√	
MCEN3004	Advanced Strength of Materials	√		
MCEN3008	Fundamentals of Heat Transfer	√		
MCEN3009	Linear Systems and Vibrations	√		
MCEN3002	Applied Fluid Mechanics		√	
MCEN3001	Machine Design		√	
MCEN3007	Exposure to Professional Engineering Practice		√	
MCEN4015	Integrated Mechanical Design	√		
MCEN4005	Mechanical Engineering Research Project 1	√		
MCEN4006	Mechanical Engineering Research Project 2		√	
For final year students only				
MCEN4005	Mechanical Engineering Research Project 1	√	√	
MCEN4006	Mechanical Engineering Research Project 2	√	√	
MCEN4015	Integrated Mechanical Design	√		
MCEN4002	Materials Engineering	√		(Elective 1, Year 4 Semester 1)
MCEN4004	Heat Transfer	√		(Elective 2, Year 4 Semester 1)
MCEN4011	Engineering Design Methodology	√		(Elective 3, Year 4 Semester 1)
MCEN4010	Professional Engineering Practice		√	
BLAW2000	Law for Engineers		√	For any Mechanical students who are yet to take this unit
MCEN4001	Industrial Fluid Mechanics		√	(Elective 1 – Year 4, Semester 2)
MCEN4008	Finite Element Analysis		√	(Elective 2 – Year 4, Semester 2)
MCEN4009	Engineering Noise Control		√	(Elective 3 – Year 4, Semester 2)
Specialisation Units Year 3 (please refer to Course Structure for list of specialisations offered):				
MCEN4013	Advanced Refrigeration System Design	√		SPUE-COMEC Computational Mechanics Specialisation
MCEN4001	Industrial Fluid Mechanic		√	SPUE-COMEC Computational Mechanics Specialisation
MCEN2003	Machine Dynamics	√		SPUC-ROBAU Robot Automation Specialisation
MXEN2003	Microcontroller Project	√		SPUC-ROBAU Robot Automation Specialisation
MXEN3000	Mechatronics Design Project		√	SPUC-ROBAU Robot Automation Specialisation
MCEN4002	Materials Engineering	√		Mechanical Flexible

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ENGR2000	Fluid Mechanics	√		SPUC-MESYS Mechanical Systems Specialisation
MCEN2001	Fundamentals of Thermodynamics		√	SPUC-MESYS Mechanical Systems Specialisation
MCEN2003	Machine Dynamics	√		SPUC-MEDVB Mechanical Dynamics and Vibration Specialisation
MCEN2002	Fundamentals of Mechanical Design		√	SPUC-MEDVB Mechanical Dynamics and Vibration Specialisation
CHEN2000	Mass and Energy Balances	√		SPUC-PROEN Process Engineering Specialisation <i>(Specialisation offered by Department Chemical and Energy Engineering)</i>
CHEN2004	Process Simulation and Data Analytics		√	SPUC-PROEN Process Engineering Specialisation <i>(Specialisation offered by Department Chemical and Energy Engineering)</i>
ENEN4014	Sustainable Urban Management and Planning		√	SPUC-SUENV Sustainable Environment Specialisation <i>(Specialisation offered by Environmental Engineering)</i>
CSEN2000	Civil Engineering Construction Materials	√		SPUC-CIVEN Civil Engineering Specialisation <i>(Specialisation offered by Civil and Construction Engineering)</i>
STEN2005	Structural Analysis of Determinate Structures		√	SPUC-CIVEN Civil Engineering Specialisation <i>(Specialisation offered by Civil and Construction Engineering)</i>
GEOT2000	Principles of Geomechanics		√	SPUC-CIVEN Civil Engineering Specialisation <i>(Specialisation offered by Civil and Construction Engineering)</i>
CVEN2001	Water and Environmental Resources		√	SPUC-CIVEN Civil Engineering Specialisation <i>(Specialisation offered by Civil and Construction Engineering)</i>
COMP1002	Data Structures and Algorithms	√		SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation <i>(Specialisation offered by Electrical and Computer Engineering)</i>
ISYS2014	Database Systems		√	SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation <i>(Specialisation offered by Electrical and Computer Engineering)</i>
ISEC2001	Fundamental Concepts of Data Security	√		SPUC-CYBSE Cybersecurity Specialisation <i>(Specialisation offered by Electrical and Computer Engineering)</i>
ISEC1000	Cyber Security Concepts		√	SPUC-CYBSE Cybersecurity Specialisation <i>(Specialisation offered by Electrical and Computer Engineering)</i>
Specialisation Units Year 4 (please refer to Course Structure for list of specialisations offered):				
MCEN4008	Finite Element Analysis		√	SPUE-COMEC Computational Mechanics Specialisation
MCEN4011	Engineering Design Methodology	√		Mechanical Flexible
MCEN4009	Engineering Noise Control		√	Mechanical Flexible
MCEN3002	Applied Fluid Mechanics		√	SPUC-MESYS Mechanical Systems Specialisation
CHEN3009	Fluid and Particle Processes	√		SPUC-PROEN Process Engineering Specialisation <i>(Specialisation offered by Department Chemical and Energy Engineering)</i>
CHEN4001	Process Safety and Risk Management		√	SPUC-PROEN Process Engineering Specialisation <i>(Specialisation offered by Department Chemical and Energy Engineering)</i>
CHEN4020	Carbon Management	√		SPUC-SUENV Sustainable Environment Specialisation

UNIT CODE	UNIT TITLE	SEM 1, 2025	SEM 2, 2025	REMARKS
				<i>(Specialisation offered by Environmental Engineering)</i>
ENEN4013	Environmental, Social and Governance		√	SPUC-SUENV Sustainable Environment Specialisation <i>(Specialisation offered by Environmental Engineering)</i>
TREN3001	Transportation Engineering and Earthworks	√		SPUC-CIVEN Civil Engineering Specialisation <i>(Specialisation offered by Civil and Construction Engineering)</i>
CSEN3000	Civil Engineering Project and Cost Management		√	SPUC-CIVEN Civil Engineering Specialisation <i>(Specialisation offered by Civil and Construction Engineering)</i>
COMP3010	Machine Learning	√		SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation <i>(Specialisation offered by Electrical and Computer Engineering)</i>
COMP3009	Data Mining		√	SPUC-AIMLN Artificial Intelligence and Machine Learning Specialisation <i>(Specialisation offered by Electrical and Computer Engineering)</i>
COMT3002	Internet of Things Design and Communications	√		SPUC-CYBSE Cybersecurity Specialisation <i>(Specialisation offered by Electrical and Computer Engineering)</i>
ISEC3005	Cyber Security - Intrusion Detection System and Incident Handling		√	SPUC-CYBSE Cybersecurity Specialisation <i>(Specialisation offered by Electrical and Computer Engineering)</i>
PROGRAMME: MECHATRONIC ENGINEERING				
MXEN2003	Microcontroller Project	√		
MCEN2003	Machine Dynamics	√		
ELEN2000	Electrical Circuits	√		Shared unit with Electrical and Electronic Engineering
CMPE2001	Foundations of Digital Design	√		Shared unit with Electrical and Electronic Engineering
COMP1002	Data Structures and Algorithms		√	Shared unit with BTECH, B-COMP
ETEN2000	Signals and Systems		√	Shared unit with Electrical and Electronic Engineering
MXEN3000	Mechatronics Design Project		√	
ENGR2001	Ethics and Sustainability in Engineering		√	
DEPARTMENT: APPLIED SCIENCES HEAD OF DEPARTMENT: PROF. M.V. PRASANNA				
PROGRAMME: APPLIED GEOLOGY				
NPSC1003	Integrating Indigenous Science and STEM	√		Shared unit with Bachelor of Computing
SPAT1007	Fundamentals of Geographic Information Systems	√		
GEOL1008	Dynamic Earth	√		
MATH1013	Introductory Mathematics	√		
GEOL2008	Field Geology Techniques	√		
GEOL2003	Mineralogy and Geochemistry	√		
GEOP2006	Introduction to Geophysical Exploration Methods	√		
GEOL2007	Structural Geology	√		
GEOL3012	Basin Dynamics	√		
ERTH3001	Climate and the Biosphere	√		
GEOL3009	Field Studies of Sedimentary Basins	√		
GEOL3003	Hydrogeology and Engineering Geology	√		
COMP1005	Fundamentals of Programming	√	√	Shared unit with Engineering First Year
GEOL1007	Planetary Science		√	
GEOL1005	Fundamentals of Geology		√	
CHEM1003	Introduction to Chemistry		√	
GEOL2009	Geological Field Mapping		√	
GEOL2011	Petrology		√	
GEOL2004	Sedimentology and Stratigraphy		√	

UNIT CODE	UNIT TITLE	SEM 1, 2025	SEM 2, 2025	REMARKS
ERTH2000	Earth Resources and Sustainability		√	
GEOL3001	Tectonics and the Dynamic Earth		√	
PEEN3000	Formation Evaluation		√	Shared unit with Petroleum Engineering
GEOL3008	Environmental Geoscience		√	
GEOL3006	Geoscience Project	√	√	

Note for Revision 07:

- Programme: Engineering First Year
Update list of optional units.
- Programme: Chemical Engineering
CHEN3001 Computational Transport Phenomena is not offered in Semester 2, 2025.
- SPUE-ADMPR Advanced Materials and Processing Specialisation (Programme: Chemical Engineering)
CHEN3013 Sustainable Palm Oil Processing and Production is not offered in Semester 2, 2025.
- SPUE-WAWMG Water, Air and Waste Management Specialisation (Programme: Chemical Engineering)
ENEN2001 Solid and Hazardous Waste Management has been removed from Chemical Engineering programme unit list. However, this unit is still offered in Semester 2, 2025 under Environmental Engineering programme unit list. Students in this specialisation can still enrol for this unit.
- SPUE-TRENT Transitional Energy Technologies Specialisation (Programme: Chemical Engineering)
CHEN4019 Electrochemical Storage and Conversion is not offered in Semester 2, 2025.
- Programme: Electrical and Electronic Engineering
New elective unit offered in Semester 2, 2025: ETEN3004 Integrated Circuit Design. Only for students who have completed ETEN2001 Electronic Fundamentals.
- SPUC-CYBSE Cybersecurity Specialisation (Programme: Electrical and Electronic Engineering)
COMT3002 Internet of Things Design and Communications is replaced with CMPE2000 Data Communications and Network Management (Semester 1, 2025).
- Programme: Bachelor of Computing (Software Engineering)
MATH1019 Linear Algebra and Statistics for Engineers is only offered in Semester 2, 2025.
- Programme: Civil and Construction Engineering
Added in GEOT4003 Design of Foundations for Semester 2, 2025.