

COURSE PLANNER

Bachelor of Engineering (Honours) (Robotics and Mechatronics) / Bachelor of Computer Science (All Majors)

BB-ERMSCS2

Semester 2 | 2022

Recommended Sequence

Units are listed on your Course Planner in a recommended sequence. However, this can be amended depending on unit availability, unit progression, timetabling and the semester in which you commenced your course.

Year One

Semester 1 Aug 2022		
Unit Code	Unit Name	Pre-requisites
PHY10004	Electronics and Electromagnetism	Nil
MTH10013	Linear Algebra and Applications	Nil
COS10009	Introduction to Programming	Nil
COS10011	Creating Web Applications	COS10009 (CR)
Semester 2 Feb/Mar 2023		
MTH10012	Calculus and Applications	Nil
PHY10001	Energy and Motion	Nil
ENG10003	Mechanics of Structures	Nil
ENG10001	Engineering, Design and Innovation	Nil
MPU3193	Philosophy and Current Issues (Malaysian and International Students)	Nil
Winter Term June 2023		
MPU3212	Bahasa Kebangsaan A (Malaysian students who do not have SPM Bahasa Melayu credit)	Nil

Year Two

Semester 3 Aug/Sept 2023		
Unit Code	Unit Name	Pre-requisites
ENG10002	Engineering Materials	Nil
EEE20001	Digital Electronics Design	Nil
SWE20004	Technical Software Development	ENG10004/COS10001/COS10009
MEE20006	Machine Dynamics 1	MTH10013 & PHY10001
MPU3183	Penghayatan Etika dan Peradaban (Malaysian Students Only)	Nil
MPU3143	Malay Language Communication 2 (International Students Only)	Nil
Semester 4 Feb/Mar 2024		
MTH20014	Mathematics 3B	MTH10012 & MTH10013
TNE10006	Network and Switching	Nil
MEE20002®	Computer Aided Engineering Mechanical	ENG10001
EEE20003®	Embedded Microcontrollers	EEE20001 & SWE20004/COS10009

Year Three

Semester 5 Aug/Sept 2024		
Unit Code	Unit Name	Pre-requisites
MEE20004	Structural Mechanics	ENG10003
RME20001	Electrical Actuators and Sensors	PHY10004
MME30001®	Engineering Management 1	100 credit points
ICT30005	Professional Issues in IT	200 credit points
EAT20008	Professional Experience in Engineering*	Introductory Seminar
Semester 6 Feb/Mar 2025		
EEE20006	Circuits and Electronics 1	PHY10004 & MTH10013
COS20015	Fundamentals of Data Management	COS10009
RME30002®	Control and Automation	MTH20014 & PHY10004/EEE20006
<i>Computer Science major unit</i>		

Year Four

Semester 7 Aug/Sept 2025		
Unit Code	Unit Name	Pre-requisites
RME40002®	Mechatronics Systems Design	EEE20003
RME30003®	Robotic Control	RME30002
EEE30004®	Digital Signal Processing	MTH20014 & EEE20002/EEE20006
<i>Computer Science major unit</i>		
Semester 8 Feb/Mar 2026		
MEE30003®	Machine Design	MEE20004
RME40003®	Robot System Design	250 credit points
<i>Computer Science major unit</i>		
<i>Computer Science major unit</i>		

Year Five

Semester 9 Aug/Sept 2026		
Unit Code	Unit Name	Pre-requisites
EAT40003®	Final Year Research and Development Project 1 (ENG/CS)	200 credit points & (SWE30010/INF30029/MME30001)
MME40001	Engineering Management 2	100 credit points
<i>Computer Science major unit</i>		
<i>Computer Science major unit</i>		
Semester 10 Feb/Mar 2026		
EAT40004®	Final Year Research Project 2 (ENG/CS)	EAT40003
MEE40003®	Machine Dynamics 2	MEE20006
<i>Computer Science major unit</i>		
<i>Computer Science major unit</i>		

Notes

- # EAT20008 Professional Experience in Engineering is compulsory for all engineering students and must be taken before the last semester of study as part of EAC's requirement. Introductory Seminar will be conducted in week 4 of normal semester.
- @ Honours merit units | BEng(Hons)(R&M)

How to use your Course Planner

Refer to the below table to help explain what units are required each semester throughout your course. The units in your planner are colour coded to assist you with mapping out your studies.

Course Information

To qualify for the award of this course, students must complete 41 units (500 credit points) comprising of:

16 Core Units

200 credit points

A set of compulsory units you MUST complete as part of your Course.

16 Robotics and Mechatronics Major Units

200 credit points

A set of compulsory units you MUST complete as part of your Course.

8 Computer Science Major Units

100 credit points

A structured set of 8 units (100 credit points) in a field of study specific to your Course.

1 Industry Placement Unit

0 credit point

A compulsory, not-for-credit unit

General Studies / Mata Pelajaran Umum

0 credit points

Compulsory units to complete as a pre-requisite to graduate (see statement below)

Advisable to enrol in Year One
Email tu@swinburne.edu.my for queries

All commencing students of Master, Degree, Diploma and Foundation courses will be automatically registered for the **Academic Integrity Training Module** in the first semester (Note: Students articulating from Foundation Studies are expected to undertake this unit as a refresher). There are 4 topics in this online module that are recommended for completion during Week 1-4 of your commencing study period. At the end of this module, students are required to complete a quiz comprised of 10 questions and achieve a score of at least 90%.

Ministry of Education requires that all NEW Cohorts pursuing Degree course (International and Malaysian) students must take the MPU units as a prerequisite for the award of their degree.

- Malaysian students: Must take and pass the units as a prerequisite for the award of their degree
- International students: Must attempt all coursework and final exam as a prerequisite for the award of their degree

COURSE PLANNER

Bachelor of Computer Science Major units

Software Development Major		
Unit Code	Unit Name	Pre-requisites
COS20001	User Centred Design	Nil
SWE20001	Managing Software Projects	SWE20004 / COS10009
COS30041	Creating Secure and Scalable Software	(COS10011 / COS20001) & (COS20007 / SWE20004)
COS20007	Object-oriented Programming	COS10009 / SWE20004
SWE30011	IoT Programming	(COS10011 / COS10005) & (COS20007 / SWE20004)
COS30008	Data Structure and Patterns	COS20007 / SWE20004
COS30017	Software Development for Mobile Devices	COS20007 / SWE20004
SWE30009	Software Testing and Reliability	COS20007 / COS20004 / COS20011
Artificial Intelligence Major		
Unit Code	Unit Name	Pre-requisites
COS20001	User-Centered Design	Nil
SWE20001	Managing Software Projects	SWE20004 / COS20007
COS20007	Object-oriented Programming	COS10009 / SWE20004
COS30019	Introduction to Artificial Intelligence	COS20007 / COS30008
COS30018	Intelligent Systems	COS20007 / SWE20004
COS30081	Fund. of Natural Language Processing	COS20015 & COS30019
COS30008	Data Structure and Patterns	COS20007 / SWE20004
COS30082	Applied Machine Learning	COS30018 / COS30019
Internet of Things Major		
Unit Code	Unit Name	Pre-requisites
STA10003	Foundations of Statistics	Nil
SWE20001	Managing Software Projects	SWE20004 / COS10009
COS20007	Object-oriented Programming	COS10009 / SWE20004
COS30017	Software Development for Mobile Devices	COS20007 / SWE20004
COS20019	Cloud Computing Architecture	COS10011 & (TNE10006 / COS20016)
SWE30011	IoT Programming	(COS10011 / COS10005) & (COS20007 / SWE20004)
COS30015	IT Security	COS10009 & COS10011 & TNE10006
SWE30012	IoT Launcher Project	SWE30011 & (COS20007/SWE20004)
Data Science Major		
Unit Code	Unit Name	Pre-requisites
STA10003	Foundations of Statistics	Nil
SWE20001	Managing Software Projects	SWE20004 / COS10009
COS10022	Introduction to Data Science	Nil
COS20007	Object-oriented Programming	COS10009 / SWE20004
COS30019	Introduction to Artificial Intelligence	COS20007 / COS30008
COS30008	Data Structure and Patterns	COS20007 / SWE20004
COS30045	Data Visualisation	COS10009
COS20028	Big Data Architecture and Application	COS10022 & COS20007
Cybersecurity Major		
Unit Code	Unit Name	Pre-requisites
SWE20001	Managing Software Projects	SWE20004 / COS10009
ICT30010	eForensic Fundamentals	TNE10006
INF30020	Information Systems Risk and Security	100CPs & SWE20004 / COS20007
TNE20002	Network Routing Principles	TNE10006
TNE30009	Network Security & Resilience	TNE10006
TNE30012	Secure Remote Access Networks	TNE20002
COS20007	Object-oriented Programming	COS10009 / SWE20004
COS30015	IT Security	COS10009 & COS10011 & TNE10006