

**AY2021-22 CURRICULUM FOR
COMPUTER ENGINEERING**

SUMMARY OF ACADEMIC UNIT REQUIREMENT

Year of Study	Core	MPE	ICC		BDE	Total AU
			C-Core	F-Core		
1	25	0	9	3	0	37
2	27	0	8	0	3	38
3	10	0	0	12	6	28
4	8	12	0	0	12	32
Total	70	12	17	15	21	135

Suggested Course Schedules

YEAR 1 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-Requisite
SC1003	Introduction to Computational Thinking & Programming	C	3	Nil
SC1005	Digital Logic	C	3	Nil
SC1013	Physics for Computing	C	2	Nil
MH1810	Mathematics I	C	3	Nil
EG1001	Engineers in Society	C	2	Nil
CC0003	Ethics & Civics in a Multi-Cultural World	C-Core	2	Nil
CC0005	Healthy Living & Wellbeing	C-Core	3	Nil
HW0001	Introduction to Academic Communication	-	0	For student who failed QET
			18	

YEAR 1 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-Requisite
SC1004	Linear Algebra for Computing	C	3	MH1810, SC1003
SC1006	Computer Organisation & Architecture	C	3	SC1005
SC1007	Data Structures & Algorithms	C	3	SC1003
MH1812	Discrete Mathematics	C	3	Nil
SC1015	Introduction to Data Science & AI	F-Core	3	SC1003
CC0001	Inquiry and Communication in an Interdisciplinary World	C-Core	2	Nil
CC0002	Navigating the Digital World	C-Core	2	Nil
			19	

YEAR 2 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-Requisite
SC2000	Probability and Statistics for Computing	C	3	MH1810
SC2001	Algorithm Design and Analysis	C	3	SC1007, MH1812
SC2002	Object Oriented Design and Programming	C	3	SC1003
SC2104	Sensors, Interfacing & Digital Control	C	3	SC1006
SC2107	Microprocessor System Design and Development	C	3	SC1006
CC0007	Science & Technology for Humanity	C-Core	3	Nil
			18	

YEAR 2 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-Requisite
SC2103	Digital System Design	C	3	SC1005
SC2005	Operating Systems	C	3	SC1006, SC1007
SC2006	Software Engineering	C	3	SC2002
SC2008	Computer Networks	C	3	SC1004, SC2000
CC0006	Sustainability: Society, Economy and Environment	C-Core	3	Nil
ML0004	Career & Entrepreneurial Development for the Future World	C-Core	2	Nil
	Broadening and Deepening Electives	BDE	3	
			20	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite
SC3102	Signal, Systems and Transform	C	3	SC1004
SC3103	Embedded Programming	C	3	SC2107
SC2079	Multidisciplinary Design Project	C	4	Year 3 standing
HW0288	Engineering Communication	F-Core	2	CC0001, Year 3 standing
	Broadening & Deepening Elective	BDE	3	Nil
	Broadening & Deepening Elective	BDE	3	Nil
			18	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite
SC3079	Professional Internship	F-Core	10	Year 3 standing
			10	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite
SC4079	Final Year Project	C	4	Year 4 standing
SC3xxx/SC4xxx	Major Prescribed Elective	MPE	3	Year 3 standing
SC3xxx/SC4xxx	Major Prescribed Elective	MPE	3	Year 3 standing
	Broadening & Deepening Elective	BDE	3	
	Broadening & Deepening Elective	BDE	3	
			16	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite
SC4079	Final Year Project	C	4	*Continue from
SC3xxx/SC4xxx	Major Prescribed Elective	MPE	3	Year 3 standing
SC3xxx/SC4xxx	Major Prescribed Elective	MPE	3	Year 3 standing
	Broadening & Deepening Elective	BDE	3	
	Broadening & Deepening Elective	BDE	3	
			16	

CE Major Prescribed Electives & Focus Areas (Minimum three within a group)

EF Area	Code	Title	Prerequisite
Artificial Intelligence	SC4000	Machine Learning	SC1004, SC1007, SC2000 (Year 3 standing)
	SC4001	Neural Networks and Deep Learning	SC1004, SC1007, SC2000 (Year 3 standing)
	SC4002	Natural Language Processing	SC2001 (Year 3 standing)
	SC4003	Intelligent Agents	SC1004, SC1007, SC2000 (Year 3 standing)
	SC4172	IoT – Tiny Machine Learning	SC2107 (Year 3 standing)
	SC4061	Computer Vision	NIL (Year 3 standing)
Security	SC3010	Computer Security	SC2005
	SC4010	Applied Cryptography	MH1812 (Year 3 standing)
	SC4011	Security Management	SC2006 (Year 3 standing)
	SC4012	Software Security	SC2005, SC2006 (Year 3 standing)
	SC4033	Network Security	SC2008(Year 3 standing)
	SC4013	Application Security	SC2005, SC2008 (Year 3 standing)
	SC4014	Concepts and Techniques for Malware Analysis	SC2005 (Year 3 standing)
	SC4015	Cyber Physical System Security	SC1006 (Year 3 Standing)
Data Science	SC4020	Data Analytics and Mining	SC2001 (Year 3 standing)
	SC4021	Information Retrieval	SC2001(Year 3 standing)
	SC4022	Network Science	SC2001 (Year 3 standing)
	SC4024	Data Visualisation	SC1003, SC2000 (Year 3 standing)
IoT	SC4031	IoT - Communications and Networking	SC2008 (Year 3 standing)
	SC4172	IoT – Tiny Machine Learning	SC2107 (Year 3 standing)
	SC4015	Cyber Physical System Security	SC1006 (Year 3 Standing)
Networking	SC3030	Advanced Computer Networks	SC2008
	SC4030	Wireless and Mobile Communication	SC2008 (Year 3 standing)
	SC4031	IoT - Communications and Networking	SC2008 (Year 3 standing)
	SC4032	Information Theory	SC2008(Year 3 standing)
No Focus	SC3050	Advanced Computer Architecture	SC1006
	SC4050	Parallel Computing	SC1006, SC2001 (Year 3 standing)
	SC4051	Distributed Systems	SC2005, SC2008 (Year 3 standing)
	SC4052	Cloud Computing	SC2005, SC2008 (Year 3 standing)
	SC4053	Blockchain Technology	MH1812, SC1007, SC2008 (Year 3 standing)
	SC4054	Simulation and Modelling	SC1007, SC2000