VIT-AP UNIVERSITY

Curriculum Format

Programme Name:	B. Tech. Computer Science and Engineering
Programme School:	Computer Science and Engineering (SCOPE)
Curriculum applicable to	AY 2021-22
Curriculum Version:	2.0
Approved by & Date	11th Academic Council, 22-11-2023

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Course Code	Category	Course Title	Ver.	T	P	C	Pre/Co-Requisite	Course Discipline
	Projects and Internships	**All are compulsory courses except for choices**				**24**		
BIC4002		Industrial Internship/ Senior Design Project	2	0	0	12		Engineering
CAP4001		Capstone	1	0	0	6		Engineering
SIT1001		Summer Internship	1	0	0	2		Engineering
ECS2002		Engineering Clinics - System Design	1	0	4	2	None	Engineering
ECS3001		Engineering Clinics - Real Time System	1	0	4	2	ECS1002	Engineering
MEC1002		Engineering Graphics	1	0	4	2	None	Engineering
	Engineering Foundation	**All are compulsory**				**16**		
CSE1012		Problem Solving using Python	1	3	2	4	None	Engineering
CSE2005		Object Oriented Programming	1	3	2	4	None	Engineering
CSE2001		Data Structures and Algorithms	1.1	3	2	4	None	Engineering
ECE1002		Fundamentals of Electrical and Electronics Engineering	1.1	3	2	4	None	Engineering
	Humanities and Management	**All are compulsory courses except for choices**				**27**		
TECH3001		Design Thinking	1	3	0	3	None	Technology
MGT2015		Entrepreneurship	1	2	0	2	None	Management
MGT1001		Ethics and Values	2			2	None	Humanities
STS1002/STS1004		Fundamentals of Aptitude (or) Introduction to Problem Solving	1.1	0	2	3	None	Humanities
STS1007/STS1009		Arithmetic problem solving (or) Introduction to quantitative, logical and verbal ability	1	0	2	3	STS1002/STS1004	Humanities
STS2006/STS2008		Getting started to skill enhancement (or) Numerical ability and cognitive intelligence	1.1	0	2	3	STS1007/STS1009	Humanities
STS2007/STS2009		Enhancing problem solving skills (or) Advanced aptitude and reasoning skills	1	0	2	3	STS2006/STS2008	Humanities
		Any two English courses depending on SKEPT result				**6**		
ENG1001		English for Essential Communication	1.1	2	2	3	SKEPT	Humanities
ENG1002		English for Effective Communication	1.1	2	2	3	SKEPT/ ENG1001	Humanities
ENG2001		English for Professional Communication	1.1	2	2	3	ENG1002	Humanities
		Any one Foreign Language course				**2**		
FRL1001		Basic French	1	2	0	2	None	Humanities
FRL1004		Basic Spanish	1	2	0	2	None	Humanities
FRL1005		Basic German	1	2	0	2	None	Humanities
FRL1006		Basic Japanese	1	2	0	2	None	Humanities
	Technology Foundation	**Any one course**				**3**		
ECE2001		Analog Devices and Circuits	1.1	3	2	4	ECE1001/ECE1002	Engineering
ECE2005		Signals and Systems	2	4	0	4	MAT1001	Engineering
ECE1008		Sensors and Control Systems	1	3	2	4	None	Engineering
MEC2002		Thermodynamics	2	4	0	4	None	Engineering
MECxxxx		Introduction to Digital Manufacturing	1	3	0	3	None	Engineering
MEC1008		Engineering Mechanics	1	4	0	4	None	Engineering
HUMxxxx		Introduction to Economics for Engineers	1	3	0	3	None	Humanities
CSE1006		Foundations for Data Analytics	1	2	2	3	None	Engineering
CSE1007		Introduction to Cryptography	2	3	2	4	None	Engineering
CSE2003		Requirements Engineering Management	1	3	0	3	CSE1005/SWE1002	Engineering
CSE3002		Artificial Intelligence	1	3	2	4	CSE1012	Engineering
CSE1017		Introduction to Geographical Information Systems	1	3	0	3	None	Engineering
ECE1003		Digital Logic Design	1.1	3	2	4	ECE1001/ECE1002	Engineering
	Science Basket	**All are Compulsory**				**20**		
MAT1001		Calculus for Engineers	1	3	2	4	None	Science
MAT1002		Applications of Differential and Difference Equations	2	3	2	4	MAT1001	Science
MAT1011		Applied Statistics	2	3	2	4	None	Science
PHY1008		Modern Physics	2	3	2	4	None	Science
CHY1009		Chemistry and Environmental Studies	1	3	2	4	None	Science
		Co/Extra Curricular [Compulsory]	2			2	None	

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Course Code	Category	Course Title	Ver.	T	P	C	Pre-Requisite	Course Discipline
ECE1003		Digital Logic Design	1.1	3	2	4	ECE1001/ECE1002	Engineering
MAT1003		Discrete Mathematical Structures	2	4	0	4	None	Science
CSE3004		Design and Analysis of Algorithms	1	3	2	4	CSE2001	Engineering
CSE2008		Operating Systems	1.1	3	2	4	None	Engineering
CSE1005		Software Engineering	1	3	2	4	None	Engineering
CSE2007		Database Management Systems	1	3	2	4	CSE2001	Engineering
CSE3003		Computer Networks	1	3	2	4	CSE2005	Engineering
ECE2002		Computer Architecture and Organization	2	4	0	4	ECE1003	Engineering
CSE1008		Theory of Computation	2	4	0	4	None	Engineering

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Course Code	Category	Course Title	Ver.	T	P	C	Pre-Requisite	Course Discipline
		Any course to fulfill the basket requirements						
MAT2003		Optimization Techniques	1	3	2	4	MAT1001	Science
CSE4005		Data Warehousing and Data Mining	1	3	2	4	CSE2007/SWE2006	Engineering
CSE3011		Network Programming	1	3	2	4	CSE3003	Engineering
CSE2010		Secure Coding	1	3	2	4	CSE2001	Engineering
CSE3015		Natural Language Processing	1	3	2	4	None	Engineering
CSE2012		Knowledge Representation and Reasoning	1	3	0	3	None	Engineering
CSE3005		Distributed Systems	1	3	2	4	CSE2008	Engineering
CSE4003		Parallel Computing	1	3	2	4	CSE2001/CSE2002/SWE2001	Engineering
CSE3001		Agile Development Process	1	3	2	4	CSE1005/CSE1003/SWE1002	Engineering
CSE4007		Digital Image Processing	1	3	2	4	None	Engineering
CSE4008		Social Network Analysis	1	3	2	4	CSE1006	Engineering
CSE2009		Soft Computing	1.1	3	2	4	None	Engineering
CSE3007		Information Retrieval	1	3	2	4	CSE2001	Engineering
CSE3006		Data Visualization	1	3	2	4	CSE1006	Engineering
CSE2011		Cyber Security and Digital Forensics	1	3	2	4	CSE1007/SWE3003	Engineering

CSE4010		Wireless and Mobile Security	1	3	0	3	CSE3012	Engineering
CSE4009		Wireless and Mobile Computing	1	3	0	3	CSE3003/SWE3001	Engineering
CSE3010		Network Design and Performance Evaluation	1	3	2	4	CSE3003	Engineering
CSE3014		Web Application Security	1	3	2	4	CSE3012	Engineering
CSE4006		Deep Learning	1	3	2	4	CSE3008	Engineering
ECE4003		Embedded Programming	1	3	2	4	ECE2004	Engineering
CSE4016		Database Administration	1	3	2	4	CSE2007/SWE2006	Engineering
CSE3013		Secure Group Communications	1	3	2	4	CSE1007/SWE3003	Engineering
CSE3018		Software Configuration Management	1	3	0	3	CSE1005/SWE1002/CSE1003	Engineering
CSE3019		Software Quality and Reliability	1	3	0	3	CSE1005/SWE1002/CSE1003	Engineering
CSE3020		Product Definition and Validation	1	3	0	3	CSE1005/SWE1002/CSE1003	Engineering
CSE4011		Internet of Things	1	3	2	4	None	Engineering
CSE4012		UI UX User Experience Design	1	3	2	4	None	Engineering
CSE4013		Reverse Engineering	1	3	0	3	CSE1005/SWE1002/CSE1003	Engineering
CSE4014		Team Software Process	1	3	0	3	CSE1005/SWE1002/CSE1003	Engineering
CSE4015		Network Administration	1	3	2	4	CSE3003/SWE3001	Engineering
CSE4017		Health Care Analytics	1	3	2	4	CSE1006	Engineering
CSE4018		Computer Vision and Robotics	1	3	2	4	CSE4007	Engineering
CSE4019		Applications of Artificial Intelligence	1	3	0	3	CSE3002	Engineering
CSE4020		Agent Based Intelligent Systems	1	3	2	4	CSE3002	Engineering
CSE4021		Introduction to Cognitive Modelling	1	3	2	4	CSE3002	Engineering
ECExxxx		Microprocessors and Microcontrollers	1	3	2	4	ECE1003	Engineering
CSE4001		Cloud Computing	1	3	0	3	CSE3003	Engineering
CSE3009		No SQL Databases	1	3	2	4	CSE2007/SWE2006	Engineering
CSE3008		Introduction to Machine Learning	1	3	2	4	MAT2003/MAT2004	Engineering
CSE3012		Network Security	1	3	2	4	CSE1007/SWE3003	Engineering
CSE2013		Information Theory and Coding	1	3	2	4	None	Engineering
CSE4022		Modelling and Simulation	1	3	0	3	None	Engineering
CSE4023		Introduction to Blockchain Technology	1	3	0	3	CSE1007/SWE3003	Engineering

University Electives Min. Credit Requirements ----------> **12**

Course Code		**Course Title**		**T**	**P**	**C**	**Pre-Requisite**	
Any Course after fulfilling Programme Core & University Core requirements and without duplicity can be taken as University Elective								

Credit Summary		**Credits**
University Core		92
Programme Core		36
Programme/Specialization Electives		20
University Electives		12
Total Credits for Graduation		**160**