VIT BHOPAL UNIVERSITY, BHOPAL

SCHOOL OF ELECTRONICS ENGINEERING

CURRICULUM VER. 2.0

B.Tech. (Computer Science and Engineering)

(2019 - 2023 Batch)

Category	Core Credits	Elective Credits	Total Credits
Natural Science	29	6	**35**
Engineering and Technology	96	21	**117**
Humanities and Management	13	9	**22**
Open Electives	0	6	**6**
Total Credits			**180**

VIT Bhopal University - B.Tech. Computer Science and Engineering (4 years - 180 Credits)

Code	Natural Sciences	Type	35 Cr.	Code	Engineering and Technology	Type	117 Cr.	Code	Humanities and Management	Type	22 Cr.		Open Electives	Type	6 Cr.
	Core Courses		29 Cr.		*Core Courses*		96 Cr.		*Core Courses*		13 Cr.				
PHY1001	Engineering Physics	LTP	4	CSE1001	Introduction to problem solving and programming	LTP	4	ENG1002	Communication for Technical Professionals	LT	3		Elective Courses from any department, specialization		3+3
CHY1001	Engineering Chemistry	LTP	4	EEE1001	Electric Circuits and Systems	LTP	4	ENG2001	Technical Writing & Composition	LT	2		**Coursera Course**	LT	2/3/4
MAT1001	Calculus and Laplace Transforms	LT	4	CSE2001	Object oriented programming with C++	LTP	4	HUM1008	Swachh Bharat	PJ	2		**Placement Training - 2**	LT	2
MAT2001	Differential and Difference Equations	LT	3	ECE2002	Digital logic design	LTP	4	HUM1001	Ethics and Values	LT	2				
MAT3002	Applied Linear Algebra	LT	3	MEE1007	Engineering Graphics	P	2	STS1001	Soft skills I	LT	1				
MAT3003	Probability, Statistics and Reliability	LT	4	CSE2002	Data Structures and Algorithms	LTP	4	STS2001	Soft skills II	LT	1				
MAT2002	Discrete Mathematics and Graph theory	LT	4	CSE2003	Computer architecture and organization	LT	4	EXC1001	Extracurricular Activity	---	2				
CHY1002	Environmental Science	LT	3	CSE2004	Theory of computation and compiler design	LT	4		**Humanities and Management Elective Courses**		9 Cr.				
	Elective Courses (2 Courses to choose from the below list of course for Natural Science)		6 Cr.	CSE3001	Database management systems	LTP	4		HUM and MGT Elective I	LT	3				
PHY2003	Computational Physics	LT	3	CSE3002	Programming in Java	LTP	4		HUM and MGT Elective II	LT	3				
PHY2002	Energy and Environmental Physics	LT	3	CSE4001	Internet and web programming	LTP	4		HUM and MGT Elective III	LT	3				
MAT2003	Applied Numerical Methods	LT	3	CSE3003	Operating systems	LTP	4								
MAT2004	Operations Research	LT	3	ECE3004	Microprocessors and Microcontrollers	LTP	4		**VITOL Course**	LT	2/3/4				
				CSE3004	Design and Analysis of Algorithms	LT	4		**Placement Training - 1**	LT	4				

				CSE2096	Engineering design	LT	2											
				CSE3005	Software Engineering	LTP	4											
				CSE2098	Project Exhibition – I	PJ	1											
				CSE2099	Project Exhibition – II	PJ	1											
				CSE3099	Engineering Project in Community Service	PJ	2											
				ECE4010	Embedded Systems	LTP	4											
				CSE3006	Computer Networks	LTP	4											
				CSE2097	Internship	PJ	2											
				CSE4098	Comprehensive Exam	---	2											
				CSE4099	Capstone Project	PJ	20											
					Elective Courses		**21 Cr.**											

Total Credits (21)																
A Minimum of 15 credits from any particular basket will enable a Certificate with Specialization in that Domain.																
Course Code	*Computational intelligence and Knowledge Management*	**TYPE**	*Cr*		*Network and Security*	**TYPE**	*Cr*	*Course Code*	*Graphics and Visualization*	**TYPE**	*Cr*	*Course Code*	*Software Engineering and Prog. Lang.*	**TYPE**	*Cr*
CSE4002	Data Visualization	LP	3	CSE4007	Ad Hoc Wireless Networks	LP	3	CSE3009	Computer Graphics	LP	3	CSE4016	Software Project Management	LT	3
CSE4003	BigData Analytics	LP	3	CSE4008	Applied Cryptography	LP	3	ECE4012	Digital Image Processing	LP	3	CSE4017	Software Testing	LT	3
								CSE3010	Computer Vision	LP	3				

CSE4004	Semantic Web Technologies	LP	3	CSE4009	Cybersecurity	LT	3	CSE4013	Pattern recognition and Image analysis	LP	3	CSE4018	Software Quality and Reliability	LT	3
CSE3007	Artificial Intelligence	LT	3	ECE4006	Sensor and IoT	LP	3	CSE4014	Computer Animation	LP	3	CSE4019	Advanced Java Programming	LP	3
CSE3008	Soft Computing	LT	3	CSE4010	Scalable and Cloud Computing	LP	3	CSE4015	Introduction to Vision and Robotics	LP	3	CSE3011	Python Programming	LP	3
CSE4005	Machine Learning	LP	3	CSE4011	Network Security	LP	3	EEE3006	Robotics and Control	LT	3	CSE3012	Mobile Application Development	LP	3
CSE4006	Knowledge Engineering	LT	3	CSE4012	Software Defined Network	LT	3					CSE4020	Agile Software Development	LT	3
Future Skill	Data Analytics /Security Analyst	LP	4											

Semester Course Arrangement – B Tech (Computer Science and Engineering)															
Semester 1				**Semester 2**				**Semester 3**				**Semester 4**			
Course Code	Course Title	Type	Cr.	Course Code	Course Title	Type	Cr.	Course Code	Course Title	Type	Cr.	Course Code	Course Title	Type	Cr.
ENG1002	Communication for Technical Professionals	LT	3	ENG2001	Technical Writing & Composition	LT	2	MAT3002	Applied Linear Algebra	LT	3	MAT3003	Probability, Statistics and Reliability	LT	4
PHY1001	Engineering Physics	LTP	4	MAT2001	Differential and Difference Equations	LT	3	CSE2003	Computer Architecture and Organization	LT	4	CSE3001	Database Management Systems	LTP	4
CHY1001	Engineering Chemistry	LTP	4	ECE2002	Digital Logic Design	LTP	4	CSE2004	Theory of Computation and Compiler Design	LT	4	ECE3004	Microprocessors and Microcontrollers	LTP	4
CSE1001	Introduction to Problem Solving and Programming	LTP	4	CSE2001	Object Oriented Programming with C++	LTP	4	CSE2002	Data Structures and Algorithms	LTP	4	CSE3003	Operating Systems	LTP	4
MAT1001	Calculus and Laplace Transforms	LT	4	MAT2002	Discrete Mathematics and Graph Theory	LT	4	CSE3002	Programming in Java	LTP	4		NS Elective-I	LT	3
EEE1001	Electric Circuits and Systems	LTP	4	MEE1008	Engineering Graphics	P	2		Hum & Mgt Elective – I	LT	3		Open Elective - I		3
HUM1007	Ethics and Values	LT	2	CHY1002	Environmental Science	LT	3	CSE2098	Project Exhibition – I (Engineering Design Project)	PJ	1	CSE2099	Project Exhibition – II (Application Project)	PJ	1
				HUM1008	Swachh Bharat	-------	2	CSE2096	Engineering Design	LT	2	EXCXXXX	Extra-Curricular Activity	--	2
Total credits			25	**Total credits**			24	**Total credits**			25	**Total credits**			25
Semester 5				**Semester 6**				**Semester 7**				**Semester 8**			
Course Code	Course Title	Type	Cr.	Course Code	Course Title	Type	Cr.	Course Code	Course Title	Type	Cr.	Course Code	Course Title	Type	Cr.
CSE3004	Design and Analysis of Algorithms	LTP	4	CSE4001	Internet and Web Programming	LTP	4		Program Elective-V	LP/LT	3	CSE4099	Capstone Project	PJ	20
CSE3005	Software Engineering	LT	4		Program Elective-II	LP/LT	3		Program Elective-VI	LP/LT	3				
CSE3006	Computer Networks	LTP	4		Program Elective-III	LP/LT	3		Hum & Mgt Elective-III	LT	3				
ECE4010	Embedded Systems	LTP	4		Program Elective-IV	LP/LT	3		Program Elective - VII	LP/LT	3				

	Program Elective-I	LP/LT	3		NS Elective-II	LT	3		Open Elective-II		3			
STS1001	Soft Skills-I	P	1	STS2001	Soft Skills-II	P	1	CSE2097	Internship	---	2			
CSE3099	Engineering Project in Community Service	PJ	0	CSE3099	Engineering Project in Community Service	PJ	2	CSE4098	Comprehensive Exam	---	2			
					Hum & Mgt Elect II	PT	3							
Total credits			**20**	**Total credits**			**22**	**Total credits**			**19**	**Total credits**		**20**