

B.TECH

(Computer Science and Engineering)

With Specialization in FULL STACK DEVELOPEMENT

Syllabus

2026-2030



Department of Computer Science and Engineering

School of Engineering & Technology, Sushant University

Gurugram Sector 55, 122003

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B.TECH- CSE (FULL STACK DEVELOPEMENT)

Syllabus (1st Year/1st & 2nd Semester)

Year	Semester-I						
	Course code	Title	L	T	P	H	Credits
First year	23BTC-0MA11T	Computational Mathematics	3	1	0	4	4
	23BTC-0IP11C	Introduction to Programming (C++)	2	0	4	6	4
	23BTC-0PY11C/23BTC-0EE11C	Physics/ Basics of Electronics and Electrical Engineering	3	1	2	6	5
	23BTC-0ED11C/23BTC-0WS11C	Engineering Graphics & Design #/ WORKSHOP	0	0	4	4	2
	EVS2111	Environmental Studies	2	0	0	2	2
	23BTC-0DT11L	Design thinking	1	0	2	2	2
	SE151	Universal Human Values	2	0	0	2	2
		Total Credits					21

Year	Semester-II							
	Course code	Title	L	T	P	H	C	
First Year	15BTC-0DM21T	Discrete Mathematics	3	1	0	4	4	
	23BTC-0PY11C/23BTC-0EE11C	Physics/ Basics of Electronics and Electrical Engineering	3	1	2	6	5	
	23BCS-0PP12C	Programming for Problem Solving (Core Java)	2	0	4	6	4	
	21ENG11	Communication in English	1	0	2	3	2	
	23BTC-0WS11C/23BTC-0ED11C	Workshop Practices #/Engineering Graphics & Design	0	0	4	4	2	
	SE156	Sports and Yoga or NSS/NCC	0	0	2	2	1	
	19BTC-1WD21L	Web Development	1	0	2	2	2	
	23BTC-0SL12C	Service Learning -1	0	0	4	4	2	
		Total Credits						22

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Syllabus (2nd Year/3rd & 4th Semester)

Year	Semester-III						
Second year	Course code	Title	L	T	P	H	Credits
	23BCS-0DS21C	Data Structures	3	0	2	5	4
	25BCS-0AW31C	Advanced Web Development	1	0	4	4	3
	CS201	Python Programming	2	0	4	6	4
	21BTC-1EE21C	Entrepreneurship Essentials	2	0	0	0	2
	TDCC	TDCC-I	2	0	0	0	2
	23BTC-0SL21C	Service Learning -2	0	0	4	4	2
	20BTC-1ME31T	Managerial Economics	2	0	0	2	2
		Total Credits					19

Year	Semester-IV						
Second Year	Course code	Title	L	T	P	H	Credits
	23BCS-0DA31C	Design & Analysis of Algorithms	3	0	2	5	4
	23BCS-0DB22C	Database Management Systems	3	0	2	5	4
	15BCS-0TC31T	Probability and Statistics	3	1	0	4	4
		Specialization Course-I	2	0	2	4	3
		Specialization Course-II	2	0	2	4	3
	TDCC	TDCC-II	2	0	0	0	2
	19BTC-1CI22T	Constitution of India	1	0	0	1	1
		Total Credits					21

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Syllabus (3rd Year/5th & 6th Semester)

Year	Semester-V						
Third year	Course code	Title	L	T	P	H	Credits
	15BCS-0TC31T	Theory of Computation and Compiler Design	3	0	2	5	4
	15BCS-0CO21T	Computer Architecture and Organization	3	0	0	3	3
	23BCS-0OS31C	Operating System	3	0	2	5	4
		Specialization Course-III	2	0	2	4	3
		Specialization Course-IV	2	0	2	4	3
	23BCS-0SE31T	Software Engineering	2	0	0	2	2
	20BCS-0IS31P	Internship Seminar-I	0	0	4	4	2
		Total Credits					21

Year	Semester-VI						
Third year	Course code	Title	L	T	P	H	Credits
	23BCS-0CN32C	Computer Networks	3	0	2	5	4
		Specialization Course-V	2	0	2	4	3
		Specialization Course-VI	2	0	2	4	3
		Competitive Programming	1	0	2	3	2
	23BTC-0PE32C	Personal Effectiveness	1	0	2	3	2
	23BCS-0PR32J	Minor Project	0	0	6	6	3
	TDCC	TDCC-III	2	0	0	2	2
		Total Credits					19

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Syllabus (4th Year/7th & 8th Semester)

Year	Semester-VII						
Final Year	Course Code	Course Title	L	T	P	H	Credits
	TDCC	TDCC-IV	2	0	0	2	2
		Specialization Course-VII	2	0	2	4	3
	20BCS-0IS41P	Internship Seminar-II	0	0	4	4	2
	23BCS-0PR41J	Major Project-I	0	0	22	22	11
	15BCS-0MP42J	Term Paper	0	1	0	1	1
		Specialization Course-VIII	2	0	2	2	3
		Total Credits					22

Year	Semester-VIII						
Final Year	Course Code	Course Title	L	T	P	H	Credits
	23BCS-0II42J	Industry / Research Lab Internship					17
	Internship option				Alternate option		
	<ul style="list-style-type: none"> • Within India or Abroad • To enhance hands-on skills (As per NEP 2020) 						
	MOOC1/Swayam	MOOC1/Swayam	3	0	0	3	3
	MOOC2/Swayam	MOOC2/Swayam	3	0	0	3	3
	23BCS-0MP42J	Major Project-II	0	0	22	22	11
	Total Credits					17	

Total no. of credit – 162

L = Lecture

T = Tutorial

P = Practical

H = Hours

C = Credits

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List of Electives

S_No	Semester	Electives		Subject	L	T	P	H	Credits
1	Sem4	Specialization Course I	FULL STACK	Internet of Things	2	0	2	4	3
2	Sem 4	Specialization Course II	FULL STACK	Fundamentals of cloud	2	0	2	4	3
3	Sem 5	Specialization Course III	FULL STACK	Backend Development using Node JS	2	0	2	4	3
4	Sem 5	Specialization Course IV	FULL STACK	Backend Development using Mongo DB	2	0	2	4	3
5	Sem 6	Specialization Course V	FULL STACK	Rest API Development	2	0	2	4	3
6	Sem 6	Specialization Course VI	FULL STACK	Blockchain	2	0	2	4	3
7	Sem 7	Specialization Course VII	FULL STACK	Firewall Management	2	0	2	4	3
8	Sem 7	Specialization Course VIII	FULL STACK	App Development	2	0	2	4	3