

COURSE STRUCTURE

B.TECH. (HONORS)

COMPUTER SCIENCE & ENGINEERING

Under

Choice Based Credit System (CBCS)

Credits Distributions

Sr. No.	Category	No. of Credits
1	Humanities and Social Sciences (HS)	16
2	Basic Sciences (BS)	20
3	Engineering Sciences (ES)	11
4	Professional Core (PC)	73
5	Professional Elective (PE)	24
6	Open Elective (OE)	16
7	Project Work (PW)	40
8	Mandatory Non-Credit Courses (MNC) (4 Courses)	-
Total		200

First Semester

S. NO.	CODE	CAT	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
				L	T	P		
1.	BCSC 0061	PC	Computer Programming - I	2	0	0	2	2
2.	BMAS0105	BS	Applied Mathematics - I	3	1	0	4	4
3.	BCSC 0062	PC	Web Technology - I	2	0	0	2	2
4.	BPHS1004	BS	Engineering Physics	3	1	0	4	4
5.	BELH0001	HS	English Language Skills for Communication - I	2	0	0	2	2
6.	BCSG0051	ES	Design Thinking	3	0	0	3	3
PRACTICALS								
1.	BCSC 0858	PC	Computer Programming Lab - I	0	0	4	2	4
2.	BCSC 0859	PC	Web Technology Lab - I	0	0	4	2	4
3.	BPHS0801	ES	Engineering Physics Lab	0	0	2	1	2
4.	BELH0801	HS	English Language Lab - I	0	0	2	1	2
5.	BCSJ 0060	PW	Case Study	0	0	0	2	0
6.	BCSJ 0061	PW	Certifications - I	0	0	0	2	0
TOTAL				15	2	12	27	29

Second Semester

S. NO.	CODE	CAT	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
				L	T	P		
1.	BCSC 0063	PC	Computer Programming - II	2	0	0	2	2
2.	BCSS 0053	BS	Applied Mathematics - II	3	1	0	4	4
3.	BCSC 0064	PC	Database Technology	3	0	0	3	3
4.	BCSG 0052	ES	Introduction to AI and Analytics	2	0	0	2	2
5.	BELH0002	HS	English Language Skills for Communication - II	2	0	0	2	2
6.	BCSG 0053	ES	Digital Logic Design	3	0	0	3	3
PRACTICALS								
1.	BCSC 0860	PC	Computer Programming Lab - II	0	0	4	2	4
2.	BCSC 0861	PC	Database Technology Lab	0	0	2	1	2
3.	BCSG 0851	ES	Introduction to AI and Analytics Lab	0	0	4	2	4
4.	BELH0802	HS	English Language Lab - II	0	0	2	1	2
5.	BCSG 0852	ES	Digital Logic Design Lab	0	0	2	1	2
6.	BCSJ 0062	PW	Tiny Project	0	0	0	2	0
7.	BCSJ 0063	PW	Certifications - II	0	0	0	2	0
TOTAL				15	1	14	27	30

Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS	PRE-REQUISITES
			L	T	P	J			
THEORY									
1.	BCSC 0062	Web Technology - I	2	0	0	0	2	2	
2.	BCSC 0061	Computer Programming- I	2	0	0	0	2	2	
3.	BCSC 0063	Computer Programming- II	2	0	0	0	2	2	
4.	BCSC 0064	Database Technology	3	0	0	0	3	3	
5.	BCSC 00xx	Data Structures and Algorithms	3	0	0	0	3	3	Programming
6.	BCSC 00xx	Object Oriented Programming	2	0	0	0	2	2	Programming
7.	BCSC 00xx	Web Technology - II	2	0	0	0	2	2	
8.	BCSC 00xx	Algorithms Design & Analysis	4	0	0	0	4	4	Programming, Data Structures
9.	BCSC 00xx	Operating System	3	0	0	0	3	3	
10.	BCSC 00xx	Data Communication & Network System	3	0	0	0	3	3	
11.	BCSC 00xx	Software Engineering and Project Management	3	0	0	0	3	3	
12.	BCSC 00xx	High Performance Computing	3	0	0	0	3	3	
13.	BCSC 00xx	Theory of Computation	4	0	0	0	4	4	
14.	BCSC 00xx	Emerging Technologies and Business Domains	3	0	0	0	3	3	
15.	BCSC 00xx	Machine Learning using Python	2	0	0	0	2	2	
16.	BCSC 00xx	Neural Network and Deep Learning	2	0	0	0	2	2	
17.	BCSC 00xx	Optimization Techniques	3	1	0	0	4	4	
18.	BCSC 00xx	Computer Organization & Microprocessor	3	0	0	0	3	3	
PRACTICALS									
1.	BCSC 0859	Web Technology Lab - I	0	0	4	0	2	4	
2.	BCSC 0858	Computer Programming Lab- I	0	0	4	0	2	4	
3.	BCSC 0860	Computer Programming Lab- II	0	0	4	0	2	4	
4.	BCSC 0861	Database Technology Lab	0	0	2	0	1	2	
5.	BCSC 00xx	Data Structures and Algorithms Lab	0	0	4	0	2	4	Programming Lab
6.	BCSC 00xx	Object Oriented Programming Lab	0	0	4	0	2	4	Programming Lab
7.	BCSC 00xx	Web Technology Lab - II	0	0	4	0	2	4	

8.	BCSC 00xx	Algorithms Design & Analysis Lab	0	0	2	0	1	2	Programming, Data Structures
9.	BCSC 00xx	Operating System Lab	0	0	2	0	1	2	
10.	BCSC 00xx	Data Communication & Network System Lab	0	0	2	0	1	2	
11.	BCSC 00xx	Software Engineering and Project Management Lab	0	0	2	0	1	2	
12.	BCSC 00xx	High Performance Computing Lab	0	0	2	0	1	2	
13.	BCSC 00xx	Machine Learning Using Python Lab	0	0	4	0	2	4	
14.	BCSC 00xx	Neural Network and Deep Learning Lab	0	0	4	0	2	4	
15.	BCSC 00xx	Computer Organization & Microprocessor Lab	0	0	2	0	1	2	
Total			49	1	46	0	73	96	

PROGRAMME ELECTIVES

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDIT	CONTACTS	PRE-REQUISITES
			L	T	P	J			
THEORY									
1.	BCSC 00xx	Program Elective - I	3	0	0	0	3	3	
2.	BCSC 00xx	Industry Domain - I	2	0	0	0	2	2	
3.	BCSC 00xx	Program Elective - II	3	0	0	0	3	3	
4.	BCSC 00xx	Industry Domain - II	2	0	0	0	2	2	
5.	BCSC 00xx	Program Elective - III	3	0	0	0	3	3	
6.	BCSC 00xx	Industry Domain - III	2	0	0	0	2	2	
7.	BCSC 00xx	Program Elective - IV	3	0	0	0	3	3	
8.	BCSC 00xx	Industry Domain - IV	2	0	0	0	2	2	
PRACTICALS									
1.	BCSC 00xx	Program Elective Lab - I	0	0	2	0	1	2	
2.	BCSC 00xx	Program Elective Lab - II	0	0	2	0	1	2	
3.	BCSC 00xx	Program Elective Lab - III	0	0	2	0	1	2	
4.	BCSC 00xx	Program Elective Lab - IV	0	0	2	0	1	2	
Total			20	0	8	0	24	28	

Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS	PRE- REQUISITES
			L	T	P	J			
1.	BCSJ 0060	Case Study	0	0	0	0	2	0	
2.	BCSJ 0062	Tiny Project	0	0	0	0	2	0	
3.	BCSC 00xx	Project - I	0	0	0	0	2	0	
4.	BCSC 00xx	Project - II	0	0	0	0	2	0	
5.	BCSC 00xx	Project - III	0	0	0	0	3	0	
6.	BCSC 00xx	Project - IV	0	0	0	0	3	0	
7.	BCSJ 0061	Certifications - I	0	0	0	0	2	0	
8.	BCSJ 0063	Certifications -II	0	0	0	0	2	0	
9.	BCSC 00xx	Certifications -III	0	0	0	0	2	0	
10.	BCSC 00xx	Certifications -IV	0	0	0	0	2	0	
11.	BCSC 00xx	Major Project - I	0	0	0	0	4	0	
12.	BCSC 00xx	Major Project - II	0	0	0	0	8	0	
13.	BCSC 00xx	External Participation-I	0	0	0	0	2	0	
14.	BCSC 00xx	External Participation-II	0	0	0	0	2	0	
15.	BCSC 00xx	Industrial Training	0	0	0	0	2	0	
TOTAL			0	0	0	0	40	0	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR /WK	PRE- REQUISITES
			L	T	P	J			
1.	BCSC 00xx	MNG-I	2	0	0	0	0	2	
2.	BCSC 00xx	MNG-II	2	0	0	0	0	2	
3.	BCSC 00xx	MNG-III	2	0	0	0	0	2	
4.	BCSC 00xx	MNG-IV	2	0	0	0	0	2	
TOTAL			8	0	0	0	0	8	

Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BELH 0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH 0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BCSC 00xx	Skill Enhancement Course- I	1	0	2	0	2	2	
4.	BCSC 00xx	Skill Enhancement Course- II	1	0	2	0	2	2	
PRACTICALS									
1.	BELH 0801	English Language Lab – I	0	0	2	0	1	2	
2.	BELH 0802	English Language Lab – II	0	0	2	0	1	2	
3.	BCSC 00xx	Soft Skills – I	0	0	2	0	1	2	
4.	BCSC 00xx	Soft Skills – II	0	0	2	0	1	2	
5.	BCSC 00xx	Soft Skills – III	0	0	4	0	2	8	
6.	BCSC 00xx	Soft Skills – IV	0	0	4	0	2	8	
TOTAL			6	0	20	0	16	32	

Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BMAS 0105	Applied Mathematics - I	3	1	0	0	4	4	
2.	BCSS 0052	Applied Mathematics - II	3	1	0	0	4	4	
3.	BCSC 00xx	Applied Mathematics - III	3	1	0	0	4	4	
4.	BCSC 00xx	Applied Mathematics - IV	3	1	0	0	4	4	
5.	BPHS 1004	Engineering Physics	3	1	0	0	4	4	
PRACTICALS									
1.	BPHS 0801	Engineering Physics Lab	0	0	2	0	1	2	
TOTAL			15	5	2	0	21	22	

Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSG 0052	Introduction to AI and Data Analytics	2	0	0	0	2	2	
2.	BCSG 0053	Digital Logic Design	3	0	0	0	3	3	
3.	BCSG 0051	Design Thinking	3	0	0	0	3	3	
PRACTICALS									
1.	BCSG 0851	Introduction to AI and Data Analytics Lab	0	0	4	0	2	4	
2.	BCSG 0852	Digital System Design Lab	0	0	2	0	1	2	
Total			8	0	6	0	11	14	

Open Electives

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS <small>L T P J</small>	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSC 00xx	Open Elective-I	4	0	0	0	0	4	
2.	BCSC 00xx	Open Elective -II	4	0	0	0	0	4	
3.	BCSC 00xx	Open Elective -III	4	0	0	0	0	4	
4.	BCSC 00xx	Open Elective -IV	4	0	0	0	0	4	
Total			16	0	0	0	0	16	