

B. TECH IN COMPUTER SCIENCE AND ENGINEERING

III SEMESTER (2018-22 BATCH)

Sl. No.	Course Code	Course Title	Hours per week				Credits	Course Type
			L	T	P	S		
1	UE18CS201	Digital Design and Computer Organization	4	0	0	0	4	FC
2	UE18CS202*	Data Structures	4	0	0	0	4	CC
3	UE18CS203	Introduction to Data Science	4	0	0	0	4	FC
4	UE18CS204	Web Technologies I	3	0	0	0	3	CC
5	UE18CS205	Discrete Mathematics and Logic	3	0	0	0	3	FC
6	UE18CS206	Digital Design and Computer Organization Laboratory	0	0	2	0	1	FC
7	UE18CS207	Data Structures Laboratory	0	0	2	0	1	CC
8	UE18CS208 X	Special Topic I	0/2	0	0/4	0/8	2	PW
9	UE19MA101 D	Engineering Mathematics – I (Applicable to Lateral Entry Students)	2	0	0	0	2	FC
Total			20/22	0	4/8	0/8	22/24	

Note: Prerequisite courses * UE18CS151

IV SEMESTER (2018-22 BATCH)

Sl. No.	Course Code	Course Title	Hours per week				Credits	Course Type
			L	T	P	S		
1	UE18MA251	Linear Algebra and Its Applications	4	0	0	0	4	FC

2	UE18CS251*	Design and Analysis of Algorithms	4	0	0	0	4	CC
3	UE18CS252	Database Management Systems	3	0	0	0	3	CC
4	UE18CS253	Microprocessor and Computer Architecture	4	0	0	0	4	FC
5	UE18CS254	Theory of Computation	3	0	0	0	3	CC
6	UE18CS255	Design and Analysis of Algorithms Laboratory	0	0	2	0	1	CC
7	UE18CS256	Microprocessor and Computer Architecture Laboratory	0	0	2	0	1	FC
8	UE18CS257 X	Special Topic II	0 / 2	0	0 / 4	0/8	2	PW
9	UE19MA151 D	Engineering Mathematics –II (Applicable to Lateral Entry Students)	2	0	0	0	2	FC
Total			20/22	0	4/8	0/8	22/24	

Note: Prerequisite courses * UE18CS151

V SEMESTER (2017-21 BATCH)

Sl. No.	Course Code	Course Title	Hours per week				Credits	Course Type
			L	T	P	S		
1	UE17CS301	Computer Networks	4	0	0	0	4	CC
2	UE17CS302*	Introduction to Operating Systems	4	0	0	0	4	CC
3	UE17CS303***	Machine Learning	4	0	0	0	4	CC
4	UE17CS304	Computer Networks Laboratory	0	0	2	0	1	CC
5	UE17CS305	Introduction to Operating Systems Laboratory	0	0	2	0	1	CC

6	UE17CS306X	Special Topic III	0 / 2	0	0 / 4	0/8	2	PW
7	UE17CS31X	Elective I	4	0	0	0	4	EC
8	UE17CS32X	Elective II	4	0	0	0	4	EC
Elective – I								
9	UE17CS311**	Advanced Algorithms	4	0	0	0	4	EC
10	UE17CS312 ^s	Database Technologies	4	0	0	0	4	EC
11	UE17CS313 ^s	Big Data	4	0	0	0	4	EC
12	UE17CS314	Multimedia Computing	4	0	0	0	4	EC
13	UE17CS315	Principles Of Programming Languages	4	0	0	0	4	EC
Elective – II								
14	UE17CS321**	Computer Graphics and Visualization	4	0	0	0	4	EC
15	UE17CS322 ^{ss}	Data Analytics	4	0	0	0	4	EC
16	UE17CS323 ^{sss}	Fuzzy Logic	4	0	0	0	4	EC
17	UE17CS324 ^{ss}	Computational Approximation : Methods and Algorithms	4	0	0	0	4	EC
18	UE17CS325**	Artificial Intelligence	4	0	0	0	4	EC
Total			20/22	0	4/8	0/8	24	

Note: Pre-requisite Courses -- *UE17CS202, UE17CS253; **UE17CS251; ^sUE17CS252; ^sUE17CS203,UE17MA251; ^{sss}UE17CS205;*UE17CS251, UE17MA251**

ELECTIVES TO BE OPTED FOR SPECIALIZATION

Sl. No.	SPECIALIZATION	ELECTIVE – I	ELECTIVE – II
A.	Algorithms & Computing Models.	UE17CS311, UE17CS312, UE17CS313, UE17CS314, UE17CS315	UE17CS323, UE17CS324, UE17CS325

B.	Systems & Core Computing.	UE17CS312, UE17CS313	UE17CS321, UE17CS324
C.	Data Science	UE17CS311, UE17CS312, UE17CS313	UE17CS321, UE17CS322, UE17CS323, UE17CS324, UE17CS325

VI SEMESTER (2017-21 BATCH)

Sl. No.	Course Code	Course Title	Hours per week				Credits	Course Type
			L	T	P	S		
1	UE17CS351*	Compiler Design	4	0	0	0	4	CC
2	UE17CS352	Cloud Computing	4	0	0	0	4	CC
3	UE17CS353**	Web Technologies - II	4	0	0	0	4	CC
4	UE17CS354	Compiler Design Laboratory	0	0	2	0	1	CC
5	UE17CS355	Web Technologies - II Laboratory	0	0	2	0	1	CC
6	UE17CS356X	Special Topic IV	0/2	0	0/4	0/8	2	PW
7	UE17CS33X	Elective III	4	0	0	0	4	EC
8	UE17CS34X	Elective IV	4	0	0	0	4	EC
Elective – III								
9	UE17CS331 [§]	Computer Network Security	4	0	0	0	4	EC
10	UE17CS332	Storage Area Networks	4	0	0	0	4	EC
11	UE17CS333***	Natural Language Processing	4	0	0	0	4	EC
12	UE17CS334 ^{§§}	High Performance Computing Architecture	4	0	0	0	4	EC
13	UE17CS335***	Parallel Computing	4	0	0	0	4	EC

COMMON TO ALL STUDENTS

1.	UE16CS401	Object Oriented Modeling and Design	4	0	0	0	4	CC
2.	UE16CS402	Software Engineering	4	0	0	0	4	CC
3.	UE16CS403 ^s	Web Technologies II	4	0	0	0	4	CC

PATHWAY 1[@]

4.	UE16CS41X	Elective V	4	0	0	0	4	EC
5.	UE16CS42X	Elective VI	4	0	0	0	4	EC

PATHWAY 2[@]

6.	UE16CS41X	Elective V	4	0	0	0	4	EC
7.	UE16CS43X	Research Credits/ MOOC Course	0	0	0/8	0/16	4	PW

PATHWAY 3[@]

8.	UE16CS42X	Elective VI	4	0	0	0	4	EC
9.	UE16CS43X	Research Credits/ MOOC Course	0	0	0/8	0/16	4	PW

Elective – V

10.	UE16CS411	Enterprise Resource Planning	4	0	0	0	4	EC
11.	UE16CS412*	Algorithms for Information Retrieval	4	0	0	0	4	EC
12.	UE16CS413	Computer Vision	4	0	0	0	4	EC
13.	UE16CS414**	Topics in Deep Learning	4	0	0	0	4	EC
14.	UE16CS415 ^{##}	Wireless Network Communications	4	0	0	0	4	EC

Elective – VI

15.	UE16CS421 ^{\$\$}	Information Security	4	0	0	0	4	EC
16.	UE16CS422 ^{\$}	Web Services	4	0	0	0	4	EC

17.	UE16CS423*	Algorithms for Intelligent Web	4	0	0	0	4	EC
18.	UE16CS424%	Social Network Analytics	4	0	0	0	4	EC
19.	UE16CS425#	Computer Systems Performance Analysis	4	0	0	0	4	EC
20.	UE16CS426*	Design Patterns	4	0	0	0	4	EC
21.	UE16CS427	Autonomous Mobile Robotics	4	0	0	0	4	EC
Total			20	0	0/8	0/16	20	

Note: Pre-requisite Courses -- \$UE16CS204; *UE16CS251; **UE16CS353; #UE16CS253; ##UE16CS301; \$\$UE16CS331; % UE16MA251, UE16CS202; @: Every student should choose one of the three given pathways.

ELECTIVES TO BE OPTED FOR SPECIALIZATION

Sl. No.	SPECIALIZATION	ELECTIVE – V	ELECTIVE – VI
A.	Algorithms & Computing Models	UE16CS411, UE16CS412, UE16CS413, UE16CS414	UE16CS423, UE16CS424, UE16CS426
B.	Systems & Core Computing	UE16CS413, UE16CS415	UE16CS421, UE16CS422, UE16CS425, UE16CS427
C.	Data Science	UE16CS411, UE16CS412, UE16CS414	UE16CS421, UE16CS423, UE16CS424

VIII SEMESTER (2016-20 BATCH)

SI #.	Course Code	Course Title	Hours / week				Credits	Course Type
			L	T	P	S		
PATHWAY 1@								
1.	UE16CS490	Project Work	0	0	24	8	14	PW
PATHWAY 2@								
1.	UE16CS491	Internship	0	0	12	0	6	PW
2.	UE16CS492	Project Work – Minor	0	0	12	8	8	PW
Elective – VII								
1.	UE16CS451	Introduction to Software Testing	2	0	0	0	2	EC

2.	UE16CS452	Introduction to Business	2	0	0	0	2	EC
3.	UE16CS453	Research Methodology	2	0	0	0	2	EC
4.	UE16CS454*	Advanced Machine Learning	2	0	0	0	2	EC
Total			2	0	24	8	16	

Note: Pre-requisite Courses -- *UE16CS203, UE16MA 251, UE16CS353.

@: Every student should choose one of the two given pathways.