B.TECH IN COMPUTER SCIENCE AND ENGINEERING

III SEMESTER (2017-21 BATCH)

Sl. No.	Course Code	Course Title	Hours / week				Credits	Course Type
			L	T	P	S		
1	UE17CS201	Digital Design and Computer Organization	4	0	0	0	4	FC
2	UE17CS202*	Data Structures	4	0	0	0	4	CC
3	UE17CS203	Introduction to Data Science	4	0	0	0	4	FC
4	UE17CS204	Web Technologies I	4	0	0	0	4	CC
5	UE17CS205	Discrete Mathematics and Logic	4	0	0	0	4	FC
6	UE17CS206	Digital Design and Computer Organization Laboratory	0	0	2	0	1	FC
7	UE17CS207	Data Structures Laboratory	0	0	2	0	1	CC
8	UE17CS208X	Special Topic I	0 /2	0	4 /0	0/8	2	PW
9	UE18MA101D	Engineering Mathematics – I(Applicable to Lateral Entry Students)	2	0	0	0	2	FC
Total			**22/24**	**0**	**4**	**0**	**24/26**	
Note: Prerequisite courses * UE17CS151								

IV SEMESTER (2017-21 BATCH)

Sl. No.	Course Code	Course Title	Hours per week				Credits	Course Type
			L	T	P	S		
1	UE17MA251	Linear Algebra and Its Applications	4	0	0	0	4	FC

2	UE17CS251*****	Design and Analysis of Algorithms	4	0	0	0	4	CC
3	UE17CS252	Data Base Management Systems	4	0	0	0	4	CC
4	UE17CS253	Microprocessor and Computer Architecture	4	0	0	0	4	FC
5	UE17CS254	Theory of Computation	4	0	0	0	4	CC
6	UE17CS255	Design and Analysis of Algorithms Laboratory	0	0	2	0	1	CC
7	UE17CS256	Microprocessor and Computer Architecture Laboratory	0	0	2	0	1	FC
8	UE17CS257 X	Special Topic II	0 /2	0	4 /0	0/8	2	PW
9	UE18MA151D	Engineering Mathematics –II (Applicable to Lateral Entry Students)	2	0	0	0	2	FC
Total			**22/24**	**0**	**4**	**0**	**24/26**	
Note: Prerequisite courses * UE17CS151								

V SEMESTER (2016-20 BATCH)

Sl. No.	**Course Code**	**Course Title**	**Hours per week**				**Credits**	**Course Type**
			L	**T**	**P**	**S**		
1	UE16CS301	Computer Networks	4	0	0	0	4	CC
2	UE16CS302*****	Introduction to Operating Systems	4	0	0	0	4	CC
3	UE16CS303	Principles of Programming Languages	4	0	0	0	4	CC
4	UE16CS304	Computer Networks Laboratory	0	0	2	0	1	CC

5	UE16CS305	Introduction to Operating Systems Laboratory	0	0	2	0	1	CC
	Elective - I							
7	UE16CS311**	Advanced Algorithms	4	0	0	0	4	EC
8	UE16CS312$	Advanced Data Base Management Systems	4	0	0	0	4	EC
9	UE16CS313$	Big Data	4	0	0	0	4	EC
10	UE16CS314	Multimedia Computing	4	0	0	0	4	EC
	Elective - II							
13	UE16CS321**	Computer Graphics and Visualization	4	0	0	0	4	EC
14	UE16CS322$$	Data Analytics	4	0	0	0	4	EC
15	UE16CS323$$$	Fuzzy Logic	4	0	0	0	4	EC
16	UE16CS324	Scientific Computing	4	0	0	0	4	EC
17	UE16CS325**	Artificial Intelligence	4	0	0	0	4	EC
		Total	**20**	**0**	**4**	**0**	**22**	

Note: **Pre-requisite Courses -- *UE16CS202; **UE16CS251; $UE16CS252; $$UE16CS203; $$$UE16CS205**

ELECTIVES TO BE OPTED FOR SPECIALIZATION

Sl. No.	**SPECIALIZATION**	**ELECTIVE – I**	**ELECTIVE – II**
A.	Algorithms & Computing Models	UE16CS311, UE16CS312, UE16CS313, UE16CS314	UE16CS323, UE16CS325
B.	Systems & Core Computing	UE16CS312, UE16CS313	UE16CS321
C.	Data Science	UE16CS311, UE16CS312, UE16CS313	UE16CS321, UE16CS322, UE16CS323, UE16CS324, UE16CS325

VI SEMESTER (2016-20 BATCH)

SI. No.	Course Code	Course Title	Hours per week				Credits	Course Type
			L	T	P	S		
1	UE16CS351*	Compiler Design	4	0	0	0	4	CC
2	UE16CS352	Cloud Computing	3	0	0	4	4	CC
3	UE16CS353**	Machine Learning	4	0	0	0	4	CC
4	UE16CS354	Compiler Design Laboratory	0	0	2	0	1	CC
5	UE16CS355	Machine Learning Laboratory	0	0	2	0	1	CC
6	UE16CS356X	Special Topic I	0 /2	0	4 /0	0/8	2	PW
	Elective - III							
7	UE16CS331$	Computer Network Security	4	0	0	0	4	EC
8	UE16CS332	Storage Area Networks	4	0	0	0	4	EC
9	UE16CS333***	Natural Language Processing	4	0	0	0	4	EC
10	UE16CS334$$	Multi Core Computing	4	0	0	0	4	EC
11	UE16CS335	Generic Programming	4	0	0	0	4	EC
12	UE16CS336	Drone Computing	4	0	0	0	4	EC
Elective - IV								
13	UE16CS341$	Software Defined Networks	4	0	0	0	4	EC
14	UE16CS342	Knowledge Management	4	0	0	0	4	EC
15	UE16CS343#	System Modeling and Simulation	4	0	0	0	4	EC
16	UE16CS344$	Network Management	4	0	0	0	4	EC
17	UE16CS345***	Digital Image Processing	4	0	0	0	4	EC

18	UE16CS346[$]	Advanced Computer Networks	4	0	0	0	4	EC
19	UE16CS347	Reconfigurable Computing	4	0	0	0	4	EC
		Total	**19**	**4**	**4**	**0**	**24**	**0**

Note: Pre-requisite Courses -- *UE16CS202, UE16CS254; **UE16MA251, UE16CS251; ***UE16CS251; [$]UE16CS301; [$$]UE16CS253; [#]UE16CS203

ELECTIVES TO BE OPTED FOR SPECIALIZATION

Sl. No.	**SPECIALIZATION**	**ELECTIVE – III**	**ELECTIVE – IV**
A.	Algorithms & Computing Models	UE16CS332, UE16CS333, UE16CS335	UE16CS342, UE16CS345
B.	Systems & Core Computing	UE16CS331, UE16CS332, UE16CS334, UE16CS336	UE16CS341, UE16CS343, UE16CS344, UE16CS345, UE16CS346, UE16CS347
C.	Data Science	UE16CS333	UE16CS342, UE16CS343

VII SEMESTER (2015-19 BATCH)

SI. No.	**Course Code**	**Course Title**	**Hours per week**				**Credits**	**Course Type**
			L	T	P	S		
COMMON TO ALL STUDENTS								
1.	UE15CS401	Object Oriented Modeling and Design	4	0	0	0	4	CC
2.	UE15CS402	Software Engineering	4	0	0	0	4	CC
3.	UE15CS403[$]	Web Technologies II	4	0	0	0	4	CC
4.	UE15CS404	Term Paper	0	0	0	8	2	PW
5.	UE15CS405^^	Programming with Java	4	0	0	0	4	FC
PATHWAY 1[@]								
6.	UE15CS41X	Elective V	4	0	0	0	4	EC
7.	UE15CS42X	Elective VI	4	0	0	0	4	EC

PATHWAY 2[@]								
8.	UE15CS41X	Elective V	4	0	0	0	4	EC
9.	UE15CS43X	Research Credits/ MOOC Course	0	0	8/0	0/16	4	PW
PATHWAY 3[@]								
10.	UE15CS42X	Elective VI	4	0	0	0	4	EC
11.	UE15CS43X	Research Credits/ MOOC Course	0	0	8/0	0/16	4	PW
	Elective - V							
12.	UE15CS411	Enterprise Resource Planning	4	0	0	0	4	EC
13.	UE15CS412*****	Algorithms for Information Retrieval	4	0	0	0	4	EC
14.	UE15CS413	Content Management	4	0	0	0	4	EC
15.	UE15CS414	Computer Vision	4	0	0	0	4	EC
16.	UE15CS415******	Advanced Machine Learning	4	0	0	0	4	EC
17.	UE15CS416[##]	Wireless Network Communications	4	0	0	0	4	EC
	Elective - VI							
18.	UE15CS421	Information Security	4	0	0	0	4	EC
19.	UE15CS422[$]	Web Services	4	0	0	0	4	EC
20.	UE15CS423*****	Algorithms for Intelligent Web	4	0	0	0	4	EC
21.	UE15CS424******	Social Network Analytics	4	0	0	0	4	EC
22.	UE15CS425[#]	Computer Systems Performance Analysis	4	0	0	0	4	EC
23.	UE15CS426*****	Design Patterns	4	0	0	0	4	EC
24.	UE15CS427	Autonomous Mobile Robotics	4	0	0	0	4	EC
		Total	**20/24**	**0**	**0**	**8**	**22/26**	

^^Applicable to Lateral Entry students only
Note: Pre-requisite Courses -- $UE15CS204; *UE15CS251; **UE15CS353; #UE15CS253; ##UE15CS301 **@: 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	UE15CS411, UE15CS412, UE15CS414, UE15CS415	UE15CS423, UE15CS424, UE15CS426
B.	Systems & Core Computing	UE15CS414, UE15CS416	UE15CS421, UE15CS422, UE15CS425, UE15CS427
C.	Data Science	UE15CS411, UE15CS412, UE15CS413, UE15CS415	UE15CS421, UE15CS423, UE15CS424

VIII SEMESTER (2015-19 BATCH)

SI #.	Course Code	Course Title	Hours / week				Credits	Course Type
			L	T	P	S		
PATHWAY 1@								
1.	UE15CS490	Project Work - Major	0	0	24	8	14	PW
PATHWAY 2@								
2.	UE15CS491	Internship	0	0	12	0	6	PW
3.	UE15CS492	Project Work - Minor	0	0	12	8	8	PW
	Elective - VII							
4.	UE15CS451	Introduction to Software Testing	2	0	0	0	2	EC
5.	UE15CS452	Introduction to Business	2	0	0	0	2	EC
6.	UE15CS453	Research Methodology	2	0	0	0	2	EC
7.	UE15CS454	Technical Writing	0	0	0	8	2	EC
		Total	**2/0**	**0**	**24**	**8/16**	**16**	

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