MANIPAL UNIVERSITY JAIPUR

B. Tech in Computer and Communication Engineering (2019-2023)

Year	THIRD SEMESTER						FOURTH SEMESTER				
	Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C
II	EO2001	Economics	3	0	0	3	BB0025	Value, Ethics and Governance	2	0	0	2
	MA2101	Engineering Mathematics III	2	1	0	3	MA2201	Engineering Mathematics IV	2	1	0	3
	CC2101	Digital Design and Computer Architecture	3	1	0	4	CC2201	Computer Networks	3	1	0	4
	CC2102	Data Communications	3	1	0	4	CC2202	Relational Database Management Systems	3	1	0	4
	CC2103	Data Structures and Algorithms	3	1	0	4	CC2203	Operating Systems	3	1	0	4
	CC2104	Object Oriented Programming	3	1	0	4	******	Open Elective – I	3	0	0	3
	CC2130	Data Communications Lab	0	0	2	1	CC2230	Computer Networks Lab	0	0	2	1
	CC2131	Data Structures and Algorithms Lab	0	0	2	1	CC2231	Relational Database Management Systems Lab	0	0	2	1
	CC2132	Object Oriented Programming Lab	0	0	2	1	CC2232	Operating Systems Lab	0	0	2	1
			17	5	6	25			16	4	6	23
	Total Contact Hours (L + T + P)		17+5+6=28				Total Contact Hours (L + T + P)		16 +4+6 = 26			

Year	FIFTH SEMESTER						SIXTH SEMESTER				
III	CC3101	Software Engineering	3	1	0	4	BB0026	Organization and Management	3	0	0	3
	CC3102	Design and Analysis of Algorithms	3	1	0	4	CC3201	Artificial Intelligence and Machine Learning	3	1	0	4
	CC3103	Foundations of Data Science	3	1	0	4	CC3202	Wireless Communications	3	1	0	4
	CC3104	Cryptography and Security	3	1	0	4	CC3203	Automata Theory and Compiler Design	3	0	0	3
	CC31XX	Program Elective – I	3	0	0	3	CC32XX	Program Elective – II	3	0	0	3
	******	Open Elective – II	3	0	0	3	******	Open Elective – III	3	0	0	3
	CC3130	Software Engineering Lab	0	0	2	1	CC3230	Artificial Intelligence and Machine Learning Lab	0	0	2	1
	CC3131	Design and Analysis of Algorithms Lab	0	0	2	1	CC3231	LINUX Shell Programming Lab	0	0	2	1
							CC3270	Minor Project	0	0	6	3
			18	4	4	24			18	2	10	25
	Total Contact Hours (L + T + P)		18 + 4 + 4 = 26				Total Contact Hours (L + T + P)		18+ 2+10 = 30			

Year	SEVENTH SEMESTER						EIGHTH SEMESTER				
IV	CC41XX	Program Elective – III	3	0	0	3	CC4270	Major Project				12
	CC41XX	Program Elective – IV	3	0	0	3						
	CC41XX	Program Elective – V	3	0	0	3						
	CC41XX	Program Elective – VI	3	0	0	3						
	CC41XX	Program Elective – VII	3	0	0	3						
	CC4170	Industrial Training	0	0	2	1						
			15	0	2	16						12

Total Contact Hours (L + T + P)	15+0+2=17				

Program Electives (Minor Specializations) (PE-I, PE-II, PE-III, PE-IV)	**Other Programme Electives (PE V, PE VI, VII)**		**Open Electives (OE-I, OE-II, OE-III)**
Web Technologies 1. CC3140: Web Programming 2. CC3240: Advanced Internet Technologies 3. CC4140: Principles of Web Services 4. CC4141: DevOps Fundamentals **Computational Intelligence** 1. CC3141: Soft Computing 2. CC3241: Computer Vision 3. CC4142: Natural Language Processing 4. CC4143: Deep Learning **Sensors Networks and IoT** 1. CC3142: Digital Communication & Signal Processing 2. CC3242: Next Generation Telecom Networks 3. CC4144: Internet of Things (IoT) 4. CC4145: Software Defined Networks	CC4146 CC4147 CC4148 CC4149 CC4150 CC4151 CC4152 CC4153 CC4154 CC4155 CC4156 CC4157 CC4158 CC4159 CC4160 CC4161 CC4162 CC4163 CC4164 CC4165 CC4166 CC4167 CC4168	Embedded Systems Networks on Chip Wireless Sensors & Adhoc Networks Human Computer Interaction Mobile Computing Information Retrieval Computer Graphics & Multimedia User Interface Design Digital Image Processing Big Data Analytics Data Mining and Data Warehousing Social Network Analysis Software Testing Cloud Computing Information Theory and Coding Network Security Spatial Data Analytics Foundation of Digital Forensics Information System Auditing, Control, and Assurance Network Vulnerabilities Cloud Security Foundations of Blockchain Technology Advanced Java	1. CC2080: Introduction to Data Structures and Algorithms 2. CC3080: Introduction to Object Oriented Programming 3. CC3081: Introduction to Web Technology 4. CC3082: Introduction to IoT 5. CC3083: Introduction to Linux