

**Faculty of Engineering**  
**School of Computer and Communication Engineering**  
**Department of Computer and Communication Engineering**  
**Degree: B. Tech. (Hons.) Computer and Communication Engineering**  
**Total Credit: (160 +18\*)**

	Third Semester						Fourth Semester				
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C
MEE20XX	Engineering Economics	3	0	0	3	MAS20XX	Statistics & Probability	3	0	0	3
MBB21XX	Management of Technology	3	0	0	3	CCE2201	Relational Database Management Systems	3	1	0	4
CCE2101	Digital Design and Computer Architecture	3	1	0	4	CCE2202	Operating Systems	3	1	0	4
CCE2102	Data Communication and Computer Networks	3	1	0	4	CCE22XX	Flexi Core - 2	3	1	0	4
CCE2103	Data Structures and Algorithms	3	1	0	4	CCE22XX	Program Elective 1	3	0	0	3
CCE21XX	Flexi Core - 1	3	1	0	4	CCE00XX	Open Elective 1	3	0	0	3
CCE2130	Data Communication and Computer Networks Lab	0	0	2	1	CCE2230	Relational Database Management Systems Lab	0	0	2	1
CCE2131	Data Structures and Algorithms Lab	0	0	2	1	CCE2231	Operating Systems Lab	0	0	2	1
CCE2170	Project-based Learning 1	0	0	2	1	CCE2270	Project-based Learning 2	0	0	2	1
					25						24
	Total Contact Hours (L+T+P)	28					Total Contact Hours (L+T+P)	27			
	Fifth Semester						Sixth Semester				
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C
CCE3101	Design and Analysis of Algorithms	3	1	0	4	CCE3201	Next Generation Communication Systems	3	1	0	4
CCE3102	Artificial Intelligence and Machine Learning	3	1	0	4	CCE32XX	Program Elective 4	3	0	0	3
CCE31XX	Flexi Core- 3	3	1	0	4	CCE32XX	Program Elective 5	3	0	0	3
CCE31XX	Program Elective 2	3	0	0	3	CCE32XX	Program Elective 6	3	0	0	3
CCE31XX	Program Elective 3	3	0	0	3	CCE00XX	Open Elective 3	3	0	0	3
CCE00XX	Open Elective 2	3	0	0	3	CCE3202	Professional Practice	1	0	0	1

**Faculty of Engineering**  
**School of Computer and Communication Engineering**  
**Department of Computer and Communication Engineering**  
**Degree: B. Tech. (Hons.) Computer and Communication Engineering**  
**Total Credit: (160 +18\*)**

<b>CCE3130</b>	Design and Analysis of Algorithms Lab	0	0	2	1	<b>CCE3230</b>	Next Generation Communication Systems Lab	0	0	2	1
<b>CCE3131</b>	Artificial Intelligence and Machine Learning Lab	0	0	2	1	<b>CCE3231</b>	Competitive Programming	0	0	2	1
<b>CCE3170</b>	Project-based Learning 3	0	0	2	1	<b>CCE3270</b>	Project-based Learning 4	0	0	6	3
<b>CCE318X*</b>	Research Methodology*	1	0	0	1	<b>CCE328X*</b>	Honors 2*	3	0	0	3
					25						25
	<b>Total Contact Hours (L+T+P)</b>	<b>28</b>					<b>Total Contact Hours (L+T+P)</b>	<b>29</b>			
	<b>Seventh Semester</b>						<b>Eighth Semester</b>				
<b>Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	<b>Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>CCE41XX</b>	Program Elective 7	3	0	0	3	<b>CCE4270</b>	Major Project				12
<b>CCE41XX</b>	Program Elective 8	3	0	0	3	<b>CCE4280*</b>	Honors Project*				8
<b>CCE00XX</b>	Open Elective 4	3	0	0	3						
<b>CCE00XX</b>	Open Elective 5	3	0	0	3						
<b>CCE4170</b>	Internship (Industry or Research)	0	0	2	1						
<b>CCE418X*</b>	Honors 3*	3	0	0	3						
<b>CCE418X*</b>	Honors 4*	3	0	0	3						
					19						20
	<b>Total Contact Hours (L+T+P)</b>	<b>20</b>					<b>Total Contact Hours (L+T+P)</b>	<b>20</b>			

**Flexi Core**

**Faculty of Engineering**  
**School of Computer and Communication Engineering**  
**Department of Computer and Communication Engineering**  
**Degree: B. Tech. (Hons.) Computer and Communication Engineering**  
**Total Credit: (160 +18\*)**

Flexi Core 1	Flexi Core 2	Flexi Core 3
CCE2120 Object Oriented Programming using C++ CCE2121 Object Oriented Programming using Java	CCE2220 Software Engineering  CCE2221 Automata theory	CCE3120 Digital Image Processing and Computer Vision CCE3121 Cloud and Edge Computing

Program Electives			
Sem IV – PE1	Sem V – PE2	Sem V – PE3	Sem VI – PE4
<ul style="list-style-type: none"> <li>• CCE2240: Foundation of Data Science</li> <li>• CCE2241: Web Programming</li> <li>• CCE2242: Cryptography and Network Security</li> </ul>	<ul style="list-style-type: none"> <li>• CCE3140: Soft Computing</li> <li>• CCE3141: Information System Security</li> <li>• CCE3142: Information System Auditing, Control, and Assurance</li> </ul>	<ul style="list-style-type: none"> <li>• CCE3143: Advanced Internet Technologies</li> <li>• CCE3144: Deep Learning</li> <li>• CCE3145: Foundations of Blockchain Technology</li> </ul>	<ul style="list-style-type: none"> <li>• CCE3240: Principles of Web Services</li> <li>• CCE3241: Big Data Analytics</li> <li>• CCE3242: Foundation of Digital Forensics</li> </ul>
Sem VI – PE5	Sem VI – PE6	Sem VII – PE7	Sem VII – PE8
<ul style="list-style-type: none"> <li>• CCE3243: DevOps Fundamentals</li> <li>• CCE3244: Recommender Systems</li> <li>• CCE3245: Cloud Security</li> </ul>	<ul style="list-style-type: none"> <li>• CCE3246: Full Stack Development</li> <li>• CCE3247: Image and Video Analytics</li> <li>• CCE3248: Network Vulnerabilities</li> </ul>	<ul style="list-style-type: none"> <li>• CCE4140: Social Network Analysis</li> <li>• CCE4141: Human-Computer Interaction</li> <li>• CCE4142: Natural Language Processing</li> </ul>	<ul style="list-style-type: none"> <li>• CCE4143: Mobile Application Development</li> <li>• CCE4144: Information Retrieval</li> <li>• CCE4145: Wireless Sensors &amp; Adhoc Networks</li> </ul>

**Open Electives**

Graded OE	Non-Graded OE
OE1 CCE0001: Introduction to Data Structures OE2 CCE 0002: Software Testing OE3 CCE0003: Introduction to Operating Systems	

**Program Electives for B. Tech. (Hons) Computer and Communication Engineering**

**Faculty of Engineering**  
**School of Computer and Communication Engineering**  
**Department of Computer and Communication Engineering**  
**Degree: B. Tech. (Hons.) Computer and Communication Engineering**  
**Total Credit: (160 +18\*)**

V / VI / VII
CCE3180: Research Methodology  CCE3280: Embedded Systems ( <a href="https://nptel.ac.in/courses/108102045">https://nptel.ac.in/courses/108102045</a> )  CCE4180: Introduction to Industry 4.0 and Industrial Internet of Things ( <a href="https://onlinecourses.nptel.ac.in/noc20_cs69/preview">https://onlinecourses.nptel.ac.in/noc20_cs69/preview</a> )  CCE4181: Foundation of Cloud IoT Edge ML( <a href="https://onlinecourses.nptel.ac.in/noc24_cs26/preview">https://onlinecourses.nptel.ac.in/noc24_cs26/preview</a> )