



**NEW HORIZON**  
**COLLEGE OF ENGINEERING**

New Horizon Knowledge Park, Ring Road, Marathalli  
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade, Accredited by NBA

**Academic Year 2020-21**

**List of Courses and the Proposed Scheme**

**of**

**Bachelor of Engineering (B.E)**

**In**

**Computer Engineering**

**(Third to Eighth Semesters)**

## List of Core Courses, Professional Electives and Open Electives

### Core Courses

Sl.No	Course Code	Course Name
1	CEE31	Mathematical Foundations of Computing
2	CEE33	Analog and Digital Electronics
3	CEE34	Data Structures using C
4	CEE35	Introduction to Computer Engineering
5	CEL36	Analog and Digital Electronics Lab
6	CEL37	Data Structures using C Lab
7	CEL38	Logic Design Lab
8	CEE39	Mini Project in Data Structures
9	CEE41	Introduction to Embedded Systems
10	CEE43	Programming with Java
11	CEE44	Microcontrollers
12	CEE45	Computer Organization
13	CEL46	Programming with Java Lab
14	CEL47	Microcontrollers Lab
15	CEE48	Mini Project in Java
16	CEE51	Automatic Control Systems
17	CEE52	Hardware Security
18	CEE53	Communication Engineering
19	CEE54	Computer Architecture
20	CEE55x	Professional Elective - 1
21	CEL57	Hardware Security Lab
22	CEL58	Communication Engineering Lab
23	CEE58	Mini Project
24	CEE61	Cyber-Physical Systems
25	CEE62	Computer Networks
26	CEE63	Hardware Testing
27	CEE64x	Professional Elective-2
28	CEL65	Cyber Physical Systems Lab
29	CEL66	Computer Networks Lab
30	CEE67	Mini Project
31	CEE71	IOT and Industry 4.0
32	CEE72	AI and Machine Learning
33	CEE73	Embedded Systems
34	CEE74X	Professional Elective
35	CEL75	IOT Lab
36	CEL76	AI and Machine Learning Lab
37	CEE77	Main Project Phase-1
38	CEE81	Robotics-Algorithms and Control
39	CEE82	Advanced Microcontrollers
40	CEE83	Main Project

## **Professional Electives**

<b>Sl. No</b>	<b>Course Code</b>	<b>Professional Electives</b>
1	CEE551	Wearable Computing
2	CEE552	Soft Computing
3	CEE553	Linear and Non-Linear Programming
4	CEE554	Serverless Architecture
5	CEE555	Wireless Communication Systems
6	CEE556	Pattern Recognition
7	CEE641	ARM Processor
8	CEE642	Network Security
9	CEE643	Cloud Computing
10	CEE644	Real Time Operating System
11	CEE645	Content Delivery Networks
12	CEE646	HDL-Based Digital Systems Design
13	CEE741	Quantum Computing
14	CEE742	Usability Engineering
15	CEE743	Soft Computing
16	CEE744	Cryptography
17	CEE745	Fundamentals of Data Sciences
18	CEE746	Fault Tolerant Computing

## OPEN ELECTIVES

<b>SL. No</b>	<b>Course Code</b>	<b>Course</b>
1	NHOP01	HP - Big Data Analytics 1
2	NHOP02	VM Ware Virtualization 1
3	NHOP03	ADOBE Experience Manager 1
4	NHOP04	HP - Big Data Analytics 2
5	NHOP05	VM Ware Virtualization 2
6	NHOP06	ADOBE Experience Manager 2
7	NHOP07	SAP
8	NHOP08	SCHNEIDER- INDUSTRY AUTOMATION
9	NHOP09	CISCO- Routing and Switching -1
10	NHOP10	DATA ANALYTICS
11	NHOP11	MACHINE LEARNING
12	NHOP12	CISCO- Routing and Switching -2
13	NHOP13	Industrial IOT- Embedded Systems
14	NHOP14	Blockchain

**B.E IN COMPUTER ENGINEERING****THIRD SEMESTER-SCHEME**

S. No	Course Code	Course	BOS	Credit Distribution			Overall Credits	Contact Hours	Marks		
				L	T	P			CIE	SEE	TOTAL
1	CEE31	Mathematical foundations of Computing	BS	2	1	0	3	4	50	50	100
2	19HSS322	Life skills for Engineers	HSS	3	0	0	3	3	50	50	100
3	CEE33	Analog and Digital Electronics	CEE	3	0	0	3	3	50	50	100
4	CEE34	Data Structures using C	CEE	3	0	0	3	3	50	50	100
5	CEE35	Introduction to Computer Engineering	CEE	3	0	0	3	3	50	50	100
6	CEL36	Analog and Digital Electronics Lab	CEE	0	0	2	2	4	25	25	50
7	CEL37	Data Structures using C Lab	CEE	0	0	2	2	4	25	25	50
8	CEL38	Logic Design Lab	CEE	0	0	2	2	4	25	25	50
9	CEE39	Mini Project in Data Structures	CEE	-	-	-	2	-	25	25	50
<b>Total</b>							<b>23</b>	<b>28</b>	<b>350</b>	<b>350</b>	<b>700</b>

**B.E IN COMPUTER ENGINEERING****FOURTH SEMESTER-SCHEME**

S. No	Course Code	Course	BOS	Credit Distribution			Overall Credits	Contact Hours	Marks		
				L	T	P			CIE	SEE	TOTAL
1	CEE41	Introduction to Embedded Systems	BS	2	1	0	3	4	50	50	100
2	19HSS421	Economics for Engineers	HSS	2	0	0	2	2	25	25	50
3	19HSS423	Environmental Science and Awareness	HSS	1	0	0	1	1	25	25	50
4	CEE43	Programming with Java	CEE	3	1	0	4	5	50	50	100
5	CEE44	Microcontrollers	CEE	3	0	0	3	3	50	50	100
6	CEE45	Computer Organization	CEE	4	0	0	4	4	50	50	100
7	CEL46	Programming with Java Lab	CEE	0	0	2	2	4	25	25	50
8	CEL47	Microcontrollers Lab	CEE	0	0	2	2	4	25	25	50
9	CEE48	Mini Project in Java	CEE	-	-	-	2	-	25	25	50
<b>Total</b>							<b>23</b>	<b>27</b>	<b>325</b>	<b>325</b>	<b>650</b>

**B.E IN COMPUTER ENGINEERING****FIFTH SEMESTER-SCHEME**

S. No	Course Code	Course	Credit Distribution			Overall Credits	Contact hours Weekly (Theory)	Marks		
			L	T	P			CIE	SEE	Total
1	CEE51	Automatic Control Systems	4	0	0	4	4	50	50	100
2	CEE52	Hardware Security	3	0	0	3	3	50	50	100
3	CEE53	Communication Engineering	4	0	0	4	4	50	50	100
4	CEE54	Computer Architecture	4	0	0	4	4	50	50	100
5	CEE55x	Professional Elective - 1	4	0	0	4	4	50	50	100
6	CEL57	Hardware Security Lab	0	0	1.5	1.5	3	25	25	50
7	CEL58	Communication Engineering Lab	0	0	1.5	1.5	3	25	25	50
8	CEE58	Mini Project	-	-	-	2	0	25	25	50
<b>TOTAL</b>						<b>23</b>	<b>25</b>	<b>325</b>	<b>325</b>	<b>650</b>

Course Code	Professional Electives (Group 1)
CEE551	Wearable Computing
CEE552	Soft Computing
CEE553	Linear and Non-Linear Programming
CEE554	Serverless Architecture
CEE555	Wireless Communication Systems
CEE556	Pattern Recognition

**B.E IN COMPUTER ENGINEERING****SIXTH SEMESTER-SCHEME**

S. No	Course Code	Course	Credit Distribution			Overall Credits	Contact hours Weekly	Marks		
			L	T	P			CIE	SEE	Total
1	CEE61	Cyber-Physical Systems	4	0	0	4	4	50	50	100
2	CEE62	Computer Networks	4	0	0	4	4	50	50	100
3	CEE63	Hardware Testing	3	0	0	3	3	50	50	100
4	CEE64x	Professional Elective-2	4	0	0	4	4	50	50	100
5	CEL65	Cyber Physical Systems Lab	0	0	1.5	1.5	3	25	25	50
6	CEL66	Computer Networks Lab	0	0	1.5	1.5	3	25	25	50
7	CEE67	Mini Project	0	2	0	2	0	25	25	50
8	NHOPxx	Open Elective	3	0	0	3	3	50	50	100
<b>Total</b>						<b>23</b>	<b>24</b>	<b>325</b>	<b>325</b>	<b>650</b>

Course Code	Professional Electives (Group 2)
CEE641	ARM Processor
CEE642	Network Security
CEE643	Cloud Computing
CEE644	Real Time Operating System
CEE645	Content Delivery Networks
CEE646	HDL-Based Digital Systems Design



**B.E IN COMPUTER ENGINEERING****SEVENTH SEMESTER-SCHEME**

S. No	Course Code	Course	Credit Distribution			Overall Credits	Contact hours Weekly (Theory)	Marks		
			L	T	P			CIE	SEE	Total
1	CEE71	IOT and Industry 4.0	3	0	0	3	3	50	50	100
2	CEE72	AI and Machine Learning	3	0	0	3	3	50	50	100
3	CEE73	Embedded Systems	3	0	0	3	3	50	50	100
4	CEE74X	Professional Elective	4	0	0	4	4	50	50	100
5	CEL75	IOT Lab	0	0	1.5	1.5	3	25	25	50
6	CEL76	AI and Machine Learning Lab	0	0	1.5	1.5	3	25	25	50
7	CEE77	Project Phase-1	-	-	-	4	-	50	50	100
8	CEE75X	Open Elective	3	0	0	3	3	50	50	100
<b>TOTAL</b>						<b>23</b>	<b>16</b>	<b>350</b>	<b>350</b>	<b>700</b>

<b>COURSE CODE</b>	<b>PROFESSIONAL ELECTIVE</b>
CEE741	Quantum Computing
CEE742	Usability Engineering
CEE743	Soft Computing
CEE744	Cryptography
CEE745	Fundamentals of Data Sciences
CEE746	Fault Tolerant Computing

**B.E IN COMPUTER ENGINEERING****EIGHTH SEMESTER-SCHEME**

S. No	Course Code	Course	Credit Distribution				Overall Credits	Contact hours Weekly (Theory)	Marks		
			L	P	T	S			CIE	SEE	Total
1	CEE81	Robotics-Algorithms and Control	4	0	0	1	4	4	50	50	100
2	CEE82	Advanced Microcontrollers	4	0	0	0	4	4	50	50	100
3	CEE83	Project	0	12	0	0	12	-	150	150	300
<b>TOTAL</b>							<b>20</b>	<b>8</b>	<b>250</b>	<b>250</b>	<b>500</b>