

Department of Mechanical Engineering
 Minimum Credits to be Earned: 160 (for Regular Students)
 127 (for Lateral Entry Students)

First Semester							
No.	Course Code	Course	POs	Contact Hours			
				L	T*	P	C
1	20HSX01	Communicative English	10,12	3	-	-	3
2	20MAX01	Engineering Mathematics I	1,12	3	1	-	3
3	20PYX01	Engineering Physics /	1,12/	3	1	-	3
	20CYX01	Engineering Chemistry	1,12				
4	20BEX01	Basics of Engineering /	1,12/	3	1	-	3
	20BEX02	Problem Solving and Programming Skills	1,12				
5	20BEX03	Problem Solving and Programming Skills Lab /	4/	-	-	3	1.5
	20HSX02	Communicative English Lab	10,12				
6	20BEX04	Engineering Drawing /	1,5,10/	-	-	3	1.5
	20BEX05	Engineering Workshop	1,9,10				
7	20PYX02	Engineering Physics Lab /	4/	-	-	3	1.5
	20CYX02	Engineering Chemistry Lab	4				
Total				12	3	9	16.5
Second Semester							
1		Language Elective	10,12	3	-	-	3
2	20MAX02	Engineering Mathematics II	1,12	3	1	-	3
3	20PYX01	Engineering Physics /	1,12/	3	1	-	3
	20CYX01	Engineering Chemistry	1,12				
4	20BEX01	Basics of Engineering /	1,12/	3	1	-	3
	20BEX02	Problem Solving and Programming Skills	1,12				
5	20BEX03	Problem Solving and Programming Skills Lab /	4/	-	-	3	1.5
	20HSX02	Communicative English Lab	10,12				
6	20BEX04	Engineering Drawing /	1,5,10/	-	-	3	1.5
	20BEX05	Engineering Workshop	1,9,10				
7	20PYX02	Engineering Physics Lab /	4/	-	-	3	1.5
	20CYX02	Engineering Chemistry Lab	4				
Total				12	3	9	16.5
Third Semester							
1	20ME301	Manufacturing Technology	1,PSO ₂	3	-	2	4
2	20ME302	Computer aided Machine Drawing	1,5,10,PSO ₁	3	-	2	4
3	20ME303	Engineering Mechanics	1	3	1	-	3
4	20ME304	Fluid Mechanics and Hydraulic Machines	1,2	3	1	-	3
5	20ME305	Kinematics of Machinery	1,2	3	1	-	3
6	20ME306	Thermodynamics	1	3	1	-	3
7	20ME307	Fluid Mechanics and Hydraulic Machines Lab	1,4,10	-	-	3	1.5
8	20MA304	Computational Mathematics Lab	1,4,10	-	-	3	1.5
9	20BEA01	Environmental Sciences	1,6,7,12	-	-	-	-
10	20ME308	Employability Skills I	9,10	-	1	1	-
11	20HSX11	EC & CC Activities I	9,10	-	-	1	-
Total				18	5	12	23
Fourth Semester							
1	20IT306	Object Oriented Programming through Java	2,3,4,5	3	-	2	4
2	20ME401	Applied Thermodynamics	1,6	3	1	-	3
3	20ME402	Dynamics of Machinery	1,2,3	3	1	-	3
4	20ME403	Metal Cutting and Machine Tools	1,2,3	3	1	-	3
5	20ME404	Mechanics of solids	1,3	3	1	-	3
6	20ME405	Thermal Engineering Lab	1,4,10	-	-	3	1.5
7	20ME406	Mechanics of Solids Lab	1,4,10	-	-	3	1.5
8	20ME407	Employability Skills II	9,10	-	1	1	3
9	20HSX11	EC & CC Activities I	9,10	-	-	1	1
Total				15	5	10	23

* Hours suggested for tutorial

Department of Electronics and Communication Engineering

Minimum Credits to be earned: 160 (for Regular Students)

127 (for Lateral Entry Students)

First Semester							
No	Course Code	Course	POs	Contact Hours			
				L	T*	P	C
1	20HSX01	Communicative English	10,12	3	-	-	3
2	20MAX01	Engineering Mathematics I	1,12	3	1	-	3
3	20PYX01	Engineering Physics /	1,12/	3	1	-	3
	20CYX01	Engineering Chemistry	1,12				
4	20BEX01	Basics of Engineering /	1,12/	3	1	-	3
	20BEX02	Problem Solving and Programming Skills	1,12				
5	20BEX03	Problem Solving and Programming Skills	4/	-	-	3	1.5
	20HSX02	Laboratory/ Communicative English Laboratory	10,12				
6	20BEX04	Engineering Drawing /	1,5,10/	-	-	3	1.5
	20BEX05	Engineering Workshop	1,9,10				
7	20PYX02	Engineering Physics Laboratory /	4/4	-	-	3	1.5
	20CYX02	Engineering Chemistry Laboratory					
Total				12	3	9	16.5
Second Semester							
1		Language Elective	10,12	3	-	-	3
2	20MAX02	Engineering Mathematics II	1,12	3	1	-	3
3	20PYX01	Engineering Physics /	1,12/	3	1	-	3
	20CYX01	Engineering Chemistry	1,12				
4	20BEX01	Basics of Engineering /	1,12/	3	1	-	3
	20BEX02	Problem Solving and Programming Skills	1,12				
5	20BEX03	Problem Solving and Programming Skills	4/	-	-	3	1.5
	20HSX02	Laboratory/ Communicative English Laboratory	10,12				
6	20BEX04	Engineering Drawing /	1,5,10/	-	-	3	1.5
	20BEX05	Engineering Workshop	1,9,10				
7	20PYX02	Engineering Physics Laboratory /	4/4	-	-	3	1.5
	20CYX02	Engineering Chemistry Laboratory					
Total				12	3	9	16.5
Third Semester							
1	20MA301	Complex Variables	1,12	3	1	-	3
2	20EC301	Electronic Devices and Circuits	1,2,3, 12, 13	3	1	-	3
3	20EC302	Linear Circuit Analysis	1,2,4,5,12	3	-	2	4
4	20EC303	Logic Circuit Design	1,2,12,13	3	1	-	3
5	20EC304	Random Variables and Stochastic Processes	1,2,12,14	3	1	-	3
6	20EC305	Signals & Systems	1,2,12,14	3	-	2	4
7	20EC306	Electronic Devices and Circuits Lab	1, 2, 4,13	-	-	3	1.5
8	20EC307	Logic Circuit Design Lab	1, 2, 4, 13	-	-	3	1.5
9	20BEA01	Environmental Studies	1,6,7,12	-	-	-	-
10	20EC308	Employability Skills I	9,10	-	1	1	-
11	20HSX11	CC & EC Activities I	9,10	-	-	1	-
Total				18	5	12	23
Fourth Semester							
1	20CSE01	Object Oriented Programming	1,2, 5,12	3	1	-	3
2	20EC401	Analog and Digital Communications	1,2,3,12,14	3	1	-	3
3	20EC402	Analog Electronic Circuits	1, 2, 3,4,5, 12,13	3	-	2	4

* Hours suggested for tutorials

4	20EC403	Electromagnetic Fields and Waves	1,2,12,14	3	1	-	3
5	20EC404	Linear Control Systems	1,2,12,14	3	1	-	3
6	20CSE02	Object Oriented Programming Lab	1,2,4,5	-	-	3	1.5
7	20EC405	Analog and Digital Communications Lab	1,2,4,14	-	-	3	1.5
8	20EC406	Employability Skills II	9,10	-	1	1	3
9	20HSX11	CC & EC Activities I	9,10	-	-	1	1
Total				15	5	10	23
Fifth Semester							
1	20EC501	Linear IC Applications	1,2,3,12,13	3	1	-	3
2	20EC502	Microprocessors and Microcontrollers	1,2,3,4,5,12,13	3	-	2	4
3	20EC503	VLSI Design	1,2,3,4,5,12,13	3	-	2	4
4	20EC504	Antennas and Microwave Engineering	1,2,3,12,13	3	1	-	3
5		Elective I (Professional Elective) ¹		3	1	-	3
6		Elective II (Open Elective I)		3	-	-	3
7	20EC505	Linear IC Applications Lab	1,2,3,4,13	-	-	3	1.5
8	20EC506	Term Paper	2,10,12	-	-	3	1.5
9	20EC507	Employability Skills III	9,10	-	1	1	-
10	20HSX12	CC&EC Activities II	9,10	-	-	1	-
11	20SIX01	Summer Internship #I ²		-	-	-	1.5
Total				18	4	12	24.5
Sixth Semester							
1	20HSX10	Engineering Economics and Project Management	11,12	3	1	-	3
2	20EC601	Cellular and Mobile Communications	1,2,3,12,14	3	1	-	3
3	20EC602	Digital Signal Processing	1,2,3,12,14	3	1	-	3
4		Elective III (Professional Elective) ¹		3	-/2	2/-	4
5		Elective IV (Open Electives)		3	-	-	3
6	20EC603	Digital Signal Processing Lab	1,2,3,4,5,14	-	-	3	1.5
7	20EC604	Mini Project	ALL	-	-	3	1.5
8	20EC605	Employability Skills IV	9,10	-	1	1	3
9	20HSX12	CC & EC Activities II	9,10	-	-	1	1
10	20SIX02	Summer Internship #II		-	-	-	1.5
11		Audit Course		-	-	-	-
Total				15	4/6	10/8	24.5
Seventh Semester							
1	20EC701	Project	ALL	-	-	16	8
2		Elective V (Professional Elective) ¹		3	1	-	3
3		Elective VI (Professional Elective)		3	1	-	3
4		Elective VII (Open Elective III)		3	-	-	3
Total				9	2	16	17
Eighth Semester							
1	20EC801	Full Semester Internship (FSI)	ALL	-	-	-	9
2		Elective VIII (Professional Elective) ³		3	1	-	3
3		Elective IX (Open Elective IV) ⁴		3	-	-	3
Total				6	1	-	15

¹The Students shall opt any of the career paths under professional electives being offered by their respective department and subsequently take up the courses in line with career path from 5th semester onwards leading to a major project in the 7th semester. The students cannot change the career path after 5th semester. In case B.Tech (Major & Minor), the choice should be of inter-disciplinary stream

²The assessment for summer Internship # I shall be done during the semester V subsequent to the completion of six weeks of the course at the semester IV

³Students shall opt any of the MOOCs from their domain on self study mode

⁴Students shall opt any of the MOOCs from other domain on self study mode

List of Electives

Language Electives							
No.	Course Code	Course	POs	Contact Hours			
				L	T	P	C
1	20HSX03	Advanced Communicative English	10,12	3	-	-	3
2	20HSX04	Communicative German		3	-	-	3
3	20HSX05	Communicative French		3	-	-	3
4	20HSX06	Communicative Japanese		3	-	-	3
5	20HSX07	Communicative Spanish		3	-	-	3
6	20HSX08	Communicative Korean		3	-	-	3
7	20HSX09	Communicative Hindi		3	-	-	3
Elective I							
Career Path I, II, III and Other Core Electives							
1	20ECC11	RTL Coding Techniques	1, 2, 3, 12, 13	3	1	-	3
2	20ECC21	Introduction to data acquisition system	1, 2, 12, 13	3	1	-	3
3	20ECC31	Information Theory and Coding Techniques	1, 2, 12, 14	3	1	-	3
4	20IT304	Database Management Systems	1, 2, 3, 12	3	1	-	3
5	20CS403	Computer Organization and Architecture	2, 3, 12, 13	3	1	-	3
6		MOOCs					
Elective II:Open Elective I							
1	20CE001	Disaster Management	2,7,12	3	-	-	3
2	20EE001	Electrical Installation and Safety Measures	6,8,12	3	-	-	3
3	20ME001	Organisational Behaviour and Financial Management	1,8,11,12	3	-	-	3
4	20EC001	Sensors for Engineering Applications	1,12	3	-	-	3
5	20CS001	Python Programming	2,3	3	-	-	3
6	20CH001	Energy conversion and storage Devices	6,7	3	-	-	3
7	20IT001	Fundamentals of Multimedia	3,5,7	3	-	-	3
8	20BS001	Nano Science and Technology	1,12	3	-	-	3
Elective III							
Career Path I, II, III and Other Core Electives							
1	20ECC12	ASIC Verification using system verilog	1, 2, 3, 12,13	3	-	2	4
2	20ECC22	Embedded System Design and IoT	1, 2, 3, 12,13	3	-	2	4
3	20ECC32	Image processing	1, 2, 3, 12,14	3	-	2	4
4	20EC004	Transmission Lines and Waveguides	1, 2, 12, 14	3	2	-	4
5	20EC005	Electronic Measurements and Instrumentation	1, 2, 12, 13	3	2	-	4
8		MOOCs					
Elective IV : Open Elective II							
1	20CE002	Environmental Impact Assessment	6,12	3	-	-	3
2	20EE002	Renewable Energy Sources	2,6,7,12	3	-	-	3
3	20ME002	Principles of Entrepreneurship	1,11,12	3	-	-	3
4	20EC002	Electronics for Agriculture	1,12	3	-	-	3
5	20CS002	Machine Learning	2,3	3	-	-	3
6	20CH002	Industrial Safety and Hazard Management	2,6,7	3	-	-	3
7	20IT002	Fundamentals of Cloud Computing	2,6,7,8,12	3	-	-	3
8	20BS002	Computational Mathematics	1,5,12	3	-	-	3
Elective V							
Career Path I, II, III and Other Core Electives							
1	20ECC13	Analog and mixed signal VLSI design	1, 2, 3, 12,13	3	1	-	3
2	20ECC23	Real Time Operating Systems	1,2,12, 13	3	1	-	3

3	20ECC33	Multimedia communications	1, 2, 3, 12,14	3	1	-	3
4	20IT403	Computer Networks	1, 12	3	1	-	3
5	20EC006	Wireless Sensor Networks MOOCs	1, 2, 12, 13, 14	3	1	-	3
Elective VI							
1	20EC007	Introduction to design for testability	1, 2, 3, 12, 13	3	1	-	3
2	20EC008	Biomedical Signal Processing	1, 2, 3, 12, 14	3	1	-	3
3	20EC009	UHF and EHF communication systems MOOCs	1, 2, 12, 14	3	1	-	3
Elective VII: Open Elective III							
1	20CE003	Solid Waste Management	2, 3, 12	3	-	-	3
2	20EE003	Introduction to sustainability	6, 7, 12	3	-	-	3
3	20ME003	Industrial engineering and management	1, 11	3	-	-	3
4	20EC003	Modern Communication Systems	1, 12	3	-	-	3
5	20CS003	Data Science for Engineering Applications	2, 3	3	-	-	3
6	20CH003	Industrial ecology and sustainability development	6, 7	3	-	-	3
7	20IT003	Fundamentals of Mobile Computing	2, 3, 5, 12	3	-	-	3
8	20BS003	Physics of materials	1, 2	3	-	-	3
Audit Course							
1	20AT001	Communication Etiquette in Workplaces	-	-	-	-	-
2	20AT002	Contemporary India: Economy, Policy and Society	-	-	-	-	-
3	20AT003	Design The Thinking	-	-	-	-	-
4	20AT004	Ethics and Integrity	-	-	-	-	-
5	20AT005	Indian Heritage and Culture	-	-	-	-	-
6	20AT006	Industrial sociology	-	-	-	-	-
7	20AT007	Intellectual Property Rights and Patents	-	-	-	-	-
8	20AT008	Introduction to Journalism	-	-	-	-	-
9	20AT009	Mass Media Communication	-	-	-	-	-
10	20AT010	Science, Technology and Development	-	-	-	-	-
11	20AT011	Social Responsibility	-	-	-	-	-
12	20AT012	The Art of Photography and Film Making	-	-	-	-	-
13	20AT013	Trans/Forming Gender	-	-	-	-	-
14	20AT014	Women in Leadership	-	-	-	-	-
B. Tech. (Honors)							
Category I							
01	20ECH11	Optimization Techniques	1, 2, 3, 12, 13, 14	-	-	-	4
02	20ECH12	Hardware Description Language	1, 2, 3, 12, 13	-	-	-	4
03	20ECH13	System Modelling	1, 2, 3, 12, 14	-	-	-	4
04	20ECH14	Optical Communications	1, 2, 3, 12, 14	-	-	-	4
Category II							
01	20ECH21	CMOS VLSI Design	1, 2, 3, 12, 13	-	-	-	4
02	20ECH22	Advanced Controllers	1, 2, 3, 12, 13	-	-	-	4
03	20ECH23	Radar	1, 2, 3, 12, 14	-	-	-	4
04	20ECH24	Artificial Neural Networks	1, 2, 3, 12, 13, 14	-	-	-	4
Category III							
01	20ECH31	Low Power VLSI	1, 2, 3, 12, 13	-	-	-	4
02	20ECH32	Robots and Control	1, 2, 3, 12, 13	-	-	-	4
03	20ECH33	Adaptive Signal Processing	1, 2, 3, 12, 14	-	-	-	4
04	20ECH34	Software Defined Radio	1, 2, 3, 12, 14	-	-	-	4

Category IV							
01	20ECH41	Adhoc and cognitive radio networks	1, 2, 3,12,14	-	-	-	4
02	20ECH42	VLSI Fabrication Technology	1,2,3,12,13,14	-	-	-	4
03	20ECH43	Advanced Wireless Communications	1, 2, 3, 12, 14	-	-	-	4
04	20ECH44	Hardware Software Co-Design and Verification	1, 2, 3, 12, 14	-	-	-	4