

A-18 Curriculum (Course Structure) for B. Tech (I Year to IV Year) - ECE under autonomous

I Year I Semester ECE

Sl. No	Course Type	Course code	Name of the Course	L	T	P	C	Marks	
								CIE	SEE
1.	BS	7HC05	Engineering Physics	3	1	0	4	30	70
2.	ES	7AC02	Network Analysis	3	0	0	3	30	70
3.	BS	7HC06	Engineering Mathematics – I	3	1	0	4	30	70
4.	ES	7BC02	Engineering Graphics & Design	1	0	4	3	30	70
5.	HS	7HC02	English (Oral communication skills)	1	0	0	1	30	70
6.	MC	7HC20	Human Values and Professional Ethics in Higher Education	3	0	0	0	30	70
								Grade Evaluation	
7.	BS	7HC65	Engineering Physics lab	0	0	3	1.5	30	70
8.	ES	7AC61	Electrical Circuits and Network Analysis lab	0	0	2	1	30	70
9	HS	7HC62	English (Oral communication skills) Lab	0	0	2	1	30	70
10	PW	7C191	Technical Seminar-I	0	0	2	1	100	-
			Total	11	2	11	19.5	370	630

I Year II Semester ECE

Sl.No	Course Type	Course code	Name of the Course	L	T	P	C	Marks	
								CIE	SEE
1.	BS	7HC03	Chemistry	3	1	0	4	30	70
2.	ES	7FC01	Problem Solving using C	3	0	0	3	30	70
3.	BS	7HC08	Engineering Mathematics – II	3	1	0	4	30	70
4.	ES	7BC01	Workshop/ Manufacturing practices	1	0	0	1	30	70
5.	HS	7HC01	English (Reading, Listening and Writing)	1	0	0	1	30	70
6.	BS	7HC63	Chemistry Lab	0	0	3	1.5	30	70
7.	ES	7FC71	Problem Solving using C Lab	0	0	3	1.5	30	70
8.	ES	7BC61	Workshop/ Manufacturing practices lab	0	0	3	1.5	30	70
9.	HS	7HC61	English (Reading, Listening and Writing) Lab	0	0	2	1	30	70
10.	PW	7C292	Technical Seminar - II	0	0	2	1	100	-
			Total	11	2	14	19.5	370	630

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II Year I Semester (III-Semester)									
S. No	Course Type	Code	Course Title	L	T	P	Credits	Marks	
								CIE	SEE
1	PC	7C301	Electronic Devices and Circuits	3	-	-	3	30	70
2	PC	7C302	Digital Logic Design	3	-	-	3	30	70
3	PC	7C303	Signals and Systems	2	1	-	3	30	70
4	ES	7C304	Probability Theory and Stochastic Process	2	1	-	3	30	70
5	BS	7HC13	Transform Techniques	2	-	-	2	30	70
6	ES	7AC43	Electrical Technology	2	-	-	2	30	70
7	ES	7BC04	Elements of Mechanical Engineering	2	-	-	2	30	70
8	MC	7HC21	Environmental Science and Ecology	3	-	-	-	30	70
								Grade Evaluation	
9	PC	7C371	Electronic Devices and Circuits Lab	-	-	2	1	30	70
10	ES	7AC94	Electrical Technology Lab	-	-	2/2	0.5	30	70
11	PC	7C372	Digital Logic Design Lab	-	-	2/2	0.5	30	70
12	PW	7C393	Technical Seminar-III	-	-	2	1	100	-
Total				19	2	7	21	430	770
II Year II Semester (IV-Semester)									
1	PC	7C405	Analog Circuits	3	-	-	3	30	70
2	PC	7C406	Electromagnetic Waves and Transmission Lines	2	1	-	3	30	70
3	PC	7CC07	Analog Communications	3	-	-	3	30	70
4	PC	7DC11	Computer Organization and Architecture	3	-	-	3	30	70
5	ES	7EC01	Data Structures	3	-	-	3	30	70
6	HS	7ZC01	Management Science and Financial Accounting	2	-	-	2	30	70
7	PC	7C473	Basic Simulation Lab	-	-	2	1	30	70
8	PC	7C474	Analog Circuits Lab	-	-	2	1	30	70
9	PC	7CC75	Analog Communications lab	-	-	2	1	30	70
10	PC	7C494	Technical Seminar-IV	-	-	2	1	100	-
11	PW	7C496	Comprehensive Viva-Voce-I	-	-	-	1	30	70
12	PW	7C461	Summer Industry Internship-I*	-	-	-	-	-	100
Total				15	1	9	22	300	700
*Evaluation will be done along with III-I Subjects									

III Year I Semester (V-Semester)									
S. No		Code	Course Title	L	T	P	Credits	Marks	
								CIE	SEE
1	PC	7CC08	IC Applications	3	-	-	3	30	70
2	PC	7C509	Digital Communications	3	-	-	3	30	70
3	PC	7DC05	Microprocessors and Microcontrollers	3	-	-	3	30	70
4	PC	7AC07	Control Systems	3	-	-	3	30	70
5	OE		Open Elective – I	3	-	-	3	30	70
6	BS	7H518	Quantative Analysis	1	1	-	2	30	70
7	PC	7DC71	Microprocessors and Micro Controllers Lab	-	-	4	2	30	70
8	PC	7CC76	IC Applications Lab	-	-	4	2	30	70
9	PC	7C577	Digital Communications Lab	-	-	4	2	30	70
10	PW	7C461	Summer Industry Internship – I	-	-	-	1	30	70
11	PW	7C595	Technical Seminar-V	-	-	2	1	100	-
			Total	16	1	14	25	400	700
III Year II Semester (VI-Semester)									
1	PC	7CC10	Digital Signal Processing	3	-	-	3	30	70
2	PC	7C611	VLSI Technology and Design	3	-	-	3	30	70
3	PC	7C612	Internet of Things and Applications	3	-	-	3	30	70
4	PC	7C613	Antennas and Wave Propagations	3	-	-	3	30	70
5	PE		Professional Elective – I	3	-	-	3	30	70
6	BS	7H619	Logical Reasoning	1	1	-	2	30	70
7	PC	7CC78	Digital Signal Processing Lab	-	-	4	2	30	70
8	PC	7C679	VLSI Design Lab	-	-	4/2*	1	30	70
9	PC	7C680	Internet of Things and Applications Lab	-	-	4/2*	1	30	70
10	HS	7HC63	Soft skills	-	-	2	1	30	70
11	PW	7C697	Comprehensive Viva-Voce-II	-	-	-	1	30	
12	PW	7C663	Group Project	-	-	4	2	30	70
13	PW	7C662	Summer Industry Internship-II*	-	-	-	-		
			Total	16	1	14	25	360	840
*Evaluation will be done along with IV-I Subjects									

IV Year I Semester (VII-Semester)									
1	PC	7EC05	Computer Networks	3	-	-	3	30	70
2	PC	7C714	Microwave and Optical Communications	2	-	-	2	30	70
3	OE		Open Elective – II	3	-	-	3	30	70
4	PE		Professional Elective – II	3	-	-	3	30	70
5	PE		Professional Elective – III	3	-	-	3	30	70
6	PC	7EC75	Computer Networks Lab	-	-	4/2	1	30	70
7	PC	7C781	Antenna Simulation Lab	-	-	4/2	1	30	70
8	PC	7C782	Micro Wave and Optical Communications Lab	-	-	4/2	1	30	70
9	PW	7C764	Project – I	-	-	4	2	100	-
10	PW	7C662	Summer Industry Internship - II	-	-	-	1	30	70
			Total	14	0	10	20	370	630
IV Year II Semester (VIII-Semester)									
1	OE		Open Elective – III	3	-	-	3	30	70
2	PE		Professional Elective – IV	3	-	-	3	30	70
3	PE		Professional Elective – V	3	-	-	3	30	70
4	PW	7C865	Project – II	-	-	10	5	50	150
			Total	9		10	14	140	360

Professional Electives

S. No	Code	Stream	Course Title
Professional Elective-I			
1	7C615	VLSI	Digital Design through Verilog
2	7C616	Embedded System	Embedded C Programming
3	7C617	Signal Processing	Digital Image and Video Processing
4	7C618	Communications	Cellular and Mobile communications
SWAYAM MOOCS Course*			
*The department will identify the MOOCS Course from the available courses in SWAYAM portal for the semester.			
Professional Elective-II			
5	7C719	VLSI	CMOS Digital IC Design
6	7C720	Embedded System	Embedded Python Programming
7	7C721	Signal Processing	DSP Processors and Architectures
8	7C722	Communications	Wireless Communications and Networks
Professional Elective-III			
9	7C723	VLSI	Digital Design Verification with System Verilog
10	7C724	Embedded System	Embedded System Design
11	7C725	Signal processing	Artificial Neural Networks
12	7C726	Communications	Software defined radio
Professional Elective-IV			
13	7C827	VLSI	Digital Design and Verification with Universal Verification Methodology
14	7C828	Embedded System	Embedded Real Time Operating Systems
15	7C829	Signal Processing	Artificial Intelligence
16	7C830	Communications	1. Satellite Communications
17	7C831		2. Radar Communications
Professional Elective-V			
18	7C832	VLSI	Mixed Signal Design
19	7C833	Embedded System	System-on-Chip Architecture
20	7C834	Signal Processing	Machine Learning
21	7C835	Communications	5G Communications

Open Electives

Code	Stream	Course Title
Open Elective-I		
7ZC05	Finance	Banking Insurance and Risk Management.
7EC65	Computer Science	JAVA Programming
7ZC22	Entrepreneurship	Basics of Entrepreneurship
7ZC25	Social Sciences Stream	Indian polity and Economy
7CC36	ECE Stream	Fundamentals of signal processing
7AC47	EEE stream	Power Electronic Devices and Converters
7BC51	Mechanical Stream	Smart Materials
Open Elective-II		
7ZC19	Finance	Entrepreneurship, Project Management and Structured Finance
7FC23	Computer Science	Data Base Systems
7ZC30	Entrepreneurship	Advanced Entrepreneurship
7ZC26	Social Sciences Stream	Ecology and disaster management
7CC37	ECE Stream	Communication Theory
7AC44	EEE stream	Fundamentals of Measurements and Instruments.
7BC53	Mechanical Stream	Principles of operation Research
	SWAYAM MOOCS Course*	
*The department will identify the MOOCS Course from the available courses in SWAYAM portal for the semester.		
Open Elective-III		
7ZC15	Finance	Financial Institutions , Markets and services
7EC67	Computer Science	Operating systems concepts
7ZC24	Entrepreneurship	Innovation and Design Thinking.
7ZC27	Social Sciences Stream	Indian History, Geography and culture.
7CC38	ECE Stream	Introduction to VLSI and Embedded Systems.
7AC45	EEE stream	Fundamentals of Renewable energy sources
7BC55	Mechanical Stream	Principles of Automation and Robotics

S. No	Course Type	Abbreviation
1	HS	Humanities and Social Science including Management Courses
2	BS	Basic Science Courses
3	ES	Engineering Science Courses
4	MC	Mandatory Courses
5	PC	Professional Core Courses
6	PW	Project Work, Seminar Internship in industry
7	PE	Professional Electives
8	OE	Open Electives

*- The highlighted courses are newly introduced in the curriculum based on feedback from various stake holders and skills-in-demand analysis.