

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
(AN AUTONOMOUS INSTITUTION AFFILIATED TO VISVESVARAYA TECHNOLOGICAL UNIVERSITY)

ELECTRONICS & COMMUNICATION ENGINEERING

CURRICULUM FOR I- VIII SEMESTER

2021 SCHEME

SEMESTER I

(Physics Cycle)

SN	Course Code	Course Name
1	21MAT11	Calculus & Linear Algebra
2	21PHY12	Engineering Physics
3	21BEE13	Basic Electrical Engineering
4	21CIV14	Elements Of Civil Engineering
5	21EGDL15	Engineering Graphics
6	21PEI16	Professional English - I
7	21PHYL17	Engineering Physics Laboratory
8	21BEL18	Basic Electrical Engineering Laboratory
9	21SSD19	Study Skill & Self Development

SEMESTER II

(Chemistry Cycle)

SN	Course Code	Course Name
1	21MAT21	Advance Calculus & Numerical Methods
2	21CHE22	Engineering Chemistry
3	21PSP23	Problem Solving Through C Programming
4	21ELN24	Electronics & Communication – Fundamentals & Applications
5	21EME25	Elements of Mechanical Engineering
6	21PEI26	Professional English - II
7	21CHEL27	Engineering Chemistry Laboratory
8	21CPL28	Computer Programming Laboratory
9	21CEP29	Communicative Skill Enhancement Practice

SEMESTER III

SN	Course Code	Course Name
1	21MEE31	Transform Calculus & Numerical Methods
2	21EC32	Basic Signal Processing
3	21EC33	Digital Circuit Design using Verilog
4	21EC34	Analog Electronic Circuits
5	21ECL35	Digital Circuit Design Laboratory
6	21ECL36	Analog Electronic Circuits Laboratory
7	21KSK37/ 47	Samskrutika Kannada
	21KBK37/ 47	Balake Kannada
	OR	
	21CIP37/ 47	Constitution of India, Professional Ethics and Cyber Law
8	21AEC38	Programming with Hardware Controllers
9	21DTI39	Ability Enhancement Course (Design Thinking and Innovation)
Course prescribed to lateral entry Diploma holders admitted to III semester B.E./B.Tech programs		
10	21MATDIP31	Additional Mathematics - I

SEMESTER IV

SN	Course Code	Course Name
1	21MCE41	Linear Algebra, Probability and Statistical Methods
2	21EC42	Network Theory & Control Systems
3	21EC43	Digital Signal Processing
4	21EC44	Communication Systems-I
5	21ECL45	Digital Signal Processing Laboratory
6	21ECL46	Communication Laboratory-I
7	21KSK37/ 47	Samskrutika Kannada
	21KBK37/ 47	Balake Kannada
	OR	
	21CIP37/47	Constitution of India, Professional Ethics and Cyber Law
8	21SSA480	Soft skills and basic aptitude
9	21AEC482	Digital System Design with FPGA
10	21UHV490	Universal Human Values
11	21INT491	Summer Internship - I
Course prescribed to lateral entry Diploma holders admitted to III semester B.E./B.Tech programs		
12	21MATDIP41	Additional Mathematics - II

SEMESTER V

SN	Course Code	Course Name
1	21EC51	Communication Systems-II
2	21EC52	Electromagnetic Theory
3	21EC53	Microcontrollers & Embedded Systems
4	21EC54X	Professional Elective - 1
5	21EC55X	Open Elective - 1
6	21ECL56	Communication Laboratory - II
7	21ECL57	Microcontrollers & Embedded System Lab
8	21ADA580	Advanced Aptitude
9	21AEC581	LINUX Fundamentals
10	21ENV59	Environmental Studies

Professional Elective – 1

1	21EC541	C++ and Data Structures
2	21EC542	Computer Organization and Architecture
3	21EC543	Operating Systems
4	21EC544	Sensors and actuators for Engineering Applications

Open Elective -1

1	21EC551	Introduction to Computer Networks
2	21EC552	Information Theory and Coding
3	21EC553	Linear Integrated Circuits and Applications
4	21EC554	Principles of Analog and Digital Communication

SEMESTER VI

SN	Course Code	Course Name
1	21EC61	Management and Entrepreneurship
2	21EC62	Microwaves and Antennas
3	21EC63	Fundamentals of VLSI Design
4	21EC64X	Professional Elective – 2
5	21EC65X	Open Elective - 2
6	21ECL66	Microwaves and Antennas Laboratory
7	21ECL67	VLSI Lab
8	21MN68	Mini Project
9	21AEC690	Internet of Things Laboratory
10	21INT691	Summer Internship-II

Professional Elective – 2

1	21EC641	Machine Learning with Python
2	21EC642	Real-Time Operating Systems
3	21EC643	Speech Signal Processing
4	21EC644	Research Methodology & IPR

Open Elective -2

1	21EC651	Internet of Things
2	21EC652	Embedded System Design
3	21EC653	Digital Image Processing
4	21EC654	Fundamentals of CMOS VLSI Technology

SEMESTER VII

SN	Course Code	Course Name
1	21EC71	Advanced VLSI Design & Testing
2	21EC72	Computer Communication Networks
3	21EC73X	Professional Elective – 3
4	21EC74X	Open Elective - 3
5	21ECL75	Advanced VLSI Design Lab
6	21ECP76	Project Work

Professional Elective – 3

1	21EC731	A Practical Approach to IoT
2	21EC732	ASIC Design
3	21EC733	Digital Image Processing with MATLAB

Open Elective -3

1	21EC741	Automotive Electronics
2	21EC742	Mobile Computing
3	21EC743	Soft Computing
4	21EC744	Multimedia Communication

SEMESTER VIII

SN	Course Code	Course Name
1	21EC81	Wireless Cellular Communication
2	21ECS82	Technical Seminar
3	21INT83	Industry Internship

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CURRICULUM FOR I- VI SEMESTER

2022 SCHEME

SEMESTER I

(Physics Cycle)

SN	Course Code	Course Name
1	**22MATE11	Mathematics for EEE Stream-I
2	22PHYE12	Physics for EEE stream
3	22EEE13	#Element of Electrical Engineering
	OR	
	22BEE13	##Basic Electronics
4	22EDC14X	Engineering Science Course-I
5	22ETC15X	Emerging Technology Course-I
	OR	
	22PLC15X	Programming Languages Course-I
6	22ENG16	Communicative English
7	22KSK17/22KBK17	Sanskritika Kannada/ Balake Kannada
	OR	
	22ICO17	Indian Constitution
8	22IDT18	Innovation and Design Thinking
	OR	
	22SFH18	Scientific Foundations of Health

(ESC-I) Engineering Science Course-I		(ETC-I) Emerging Technology Course-I	
Code	Title	Code	Title
22ESC141	Introduction to Civil Engineering	22ETC15A	Smart Materials and Systems
22ESC142	Introduction to Electrical Engineering	22ETC15B	Green Buildings
22ESC143	Introduction to Electronics Engineering	22ETC15E	Renewable Energy Sources
22ESC144	Introduction to Mechanical Engineering	22ETC15F	Drone Technology
22ESC145	Introduction to C Programming	22ETC15G	Introduction to Sustainable Engineering
		22ETC15H	Introduction to Internet of Things (IoT)
		22ETC15I	Waste Management
		22ETC15J	Introduction to Cyber Security

(PLC-I) Programming Language Courses-I	
Code	Title
22PLC15A	Introduction to Web Programming
22PLC15B	Introduction to Python Programming
22PLC15C	Basics of JAVA Programming
22PLC15D	Introduction to C++ Programming

SEMESTER II

(Chemistry Cycle)

SN	Course Code	Course Name
1	**22MATE21	Mathematics for EES-II
2	22CHEE22	Chemistry for EES
3	22CED23	Computer-Aided Engineering Drawing
4	22ESC24X	Engineering Science Course-II
5	22PLC25X	Programming Languages Course-II
	OR	
	22ETC25X	Emerging Technology Course-II
6	22PWS26	Professional Writing Skills in English
7	22ICO27	Indian Constitution
	OR	
	22KSK27/22KBK27	Sanskrutika Kannada/ Balake Kannada
8	22FH28	Scientific Foundations of Health
	OR	
	22IDT28	Innovation and Design Thinking

(ESC-II) Engineering Science Course-II		(ETC-II) Emerging Technology Course-II	
Code	Title	Code	Title
22ESC241	Introduction to Civil Engineering	22ETC25A	Smart Materials and Systems
22ESC242	Introduction to Electrical Engineering	22ETC25B	Green Buildings
22ESC243	Introduction to Electronics Engineering	22ETC25E	Renewable Energy Sources
22ESC244	Introduction to Mechanical Engineering	22ETC25F	Drone Technology
22ESC245	Introduction to C Programming	22ETC25G	Introduction to Sustainable Engineering
		22ETC25H	Introduction to Internet of Things (IoT)
		22ETC25I	Waste Management
		22ETC25J	Introduction to Cyber Security
(PLC-II) Programming Language Courses-II			
Code	Title		
22PLC25A	Introduction to Web Programming		
22PLC25B	Introduction to Python Programming		
22PLC25C	Basics of JAVA Programming		
22PLC25D	Introduction to C++ Programming		

SEMESTER III

SN	Course Code	Course Name
1	22BB31	Biology for Engineers
2	22EC32	Digital Circuit Design using Verilog
3	22EC33	Network Analysis
4	22EC34	Analog Electronic Circuits
5	22ECL35	Analog Electronic Circuits Laboratory
6	22EC361	ESC/ETC/PLC (Computer Organization and Architecture)
7	22SC37	Social Connect and Responsibility
8	22EC381	Ability Enhancement Course/Skill Enhancement Course – III Department specific ability enhancement course (Programming with Hardware Controllers)
9	22NS39	National Service Scheme (NSS)
	22PE39	Physical Education (PE) (Sports and Athletics)
	22YO39	Yoga
ADDITIONAL MATHEMATICS for Lateral Entry Students		
1	22MATDIP31	Additional Mathematics-I

SEMESTER IV

SN	Course Code	Course Name
1	22MEE41	Applied Mathematics for Electrical and Electronics Engineering
2	22EC42	Engineering Electromagnetics
3	22EC43	Control Systems
4	22EC44	Communication Systems- I
5	22ECL45	Communication Laboratory-I
6	22EC46x	ESC/ETC/PLC
7	22PSW47	Ability Enhancement Course / Skill Enhancement Course – IV (Professional Skills for the Work Place)
8	22UH48	Universal human values course
9	22NS49	National Service Scheme (NSS)
	22PE49	Physical Education (PE) (Sports and Athletics)
	22YO49	Yoga
ADDITIONAL MATHEMATICS for Lateral Entry Students		
1	22MATDIP41	Additional Mathematics-II
Engineering Science Course (ESC/ETC/PLC)		
01	22EC461	8051 Microcontroller
02	22EC462	Oops using C++

SEMESTER V

SN	Course Code	Course Name
1	22EC51	Principles of Management & Economics
2	22EC52	Fundamentals of VLSI Design
3	22EC53	Communication Systems- II
4	22ECL54	Communication Laboratory-II
5	22EC55X	Professional Elective Course
6	22ECMN56	Mini Project
7	22ADA57	Ability Enhancement Course/Skill Development Course - V (Advanced aptitude)
8	22ES58	Environmental Studies
9	22NS59	National Service Scheme (NSS)
	22PE59	Physical Education (PE) (Sports and Athletics)
	22YO59	Yoga

Professional Elective Course

1	22EC551	Embedded Systems & Applications
2	22EC552	Sensors and actuators for Engineering Applications
3	22EC553	Theory of Algorithms
4	22EC554	Quantum Computing
5	22EC555	Introduction to AI

SEMESTER VI

SN	Course Code	Course Name
1	22EC61	Digital Signal Processing
2	22EC62	Microwaves and Antennas
3	22EC63X	Professional Elective Course
4	22EC64X	Open Elective Course
5	22ECP65	Project Phase I
6	22ECL66	Microwaves and Antennas Lab
7	22RM67	Research Methodology and IPR
9	22NS69	National Service Scheme (NSS)
	22PE69	Physical Education (PE) (Sports and Athletics)
	22YO69	Yoga

Professional Elective Course

1	22EC631	Principles of AR VR Technologies
2	22EC632	Machine Learning with Python
3	22EC633	System Verilog and Verification
4	22EC634	Computer Vision
5	22EC635	Fundamentals of Robotics and Applications
6	22EC636	Satellite Communication

Open Elective Course

1	22EC641	Internet of Things
2	22EC642	Embedded System Design
3	22EC643	Fundamentals of CMOS VLSI Technology
4	22EC644	Principles of Analog and Digital Communication
5	22EC645	High Performance Computing