

**B. Tech in Electronics & Telecommunication Engineering
Curriculum for Second Year**

Semester III										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
BSC	BTBS301	Engineering Mathematics – III	3	1	-	20	20	60	100	4
PCC 1	BTETC302	Electronic Devices & Circuits	3	1	-	20	20	60	100	4
PCC 2	BTETC303	Digital Electronics	3	1	-	20	20	60	100	4
ESC	BTES304	Electrical Machines and Instruments	3	1	-	20	20	60	100	4
LC	BTETL305	Electronic Devices & Circuits Lab	-	-	2	60	-	40	100	1
LC	BTETL306	Digital Electronics Lab	-	-	2	60	-	40	100	1
Seminar	BTETS307	Seminar I	-	-	4	60	-	40	100	2
Internship	BTES211P	Internship – 1 Evaluation	-	-	-	-	-	-	-	Audit
Total			12	4	8	260	80	360	700	20
Semester IV										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 3	BTETC401	Network Theory	3	1	-	20	20	60	100	4
PCC 4	BTETC402	Signals and Systems	3	1	-	20	20	60	100	4
HSSMC	BTHM403	Basic Human Rights	3	-	-	20	20	60	100	3
BSC	BTBS404	Probability Theory and Random Processes	3	-	-	20	20	60	100	3
PEC 1	BTETPE405	(A) Numerical Methods and Computer Programming	3	1	-	20	20	60	100	4
		(B) Data Compression & Encryption								
		(C) Computer Organization and Architecture								
		(D) Introduction to MEMS								
		(E) Python Programming								
LC	BTETL406	Network Theory Lab & Signals and Systems Lab	-	-	4	60	-	40	100	2
Seminar	BTETS407	Seminar II	-	-	4	60	-	40	100	2
Internship	BTETP408 (Internship – 2)	Field Training /Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at onetime).	-	-	-	-	-	-	-	Audit (evaluation will be in V Sem.)
Total			15	3	8	220	100	380	700	22

BSC = Basic Science Course, ESC = Engineering Science Course, PCC = Professional Core Course
 PEC = Professional Elective Course, OEC = Open Elective Course, LC = Laboratory Course
 HSSMC = Humanities and Social Science including Management Courses.

5. Mrinal Mandal and Amir Asif, Continuous and Discrete Time Signals and Systems, Cambridge University Press, 2007.
6. Peyton Peebles, "Probability, Random Variable, Random Processes", 4th Edition, Tata McGraw Hill.
7. A. NagoorKanni "Signals and Systems", 2nd edition, McGrawHill.
8. NPTEL video lectures on Signals and Systems.
9. Roberts, M.J., "Fundamentals of Signals & Systems", Tata McGraw Hill, 2007.
10. Ziemer, R.E., Tranter, W.H. and Fannin, D.R., "Signals and Systems: Continuous and Discrete", 4th 2001 Ed., Pearson Education.

BTHM403 Basic Human Rights

3 Credits

Course Objectives:

1. To train the young minds facing the challenges of the pluralistic society and the rising conflicts and tensions in the name of particularistic loyalties to caste, religion, region and culture.
2. To give knowledge of the major "signposts" in the historical development of human rights, the range of contemporary declarations, conventions, and covenants.
3. To enable them to understand the basic concepts of human rights (including also discrimination, equality, etc.), the relationship between individual, group, and national rights.
4. To develop sympathy in their minds for those who are denied rights.
5. To make the students aware of their rights as well as duties to the nation

Course Outcomes:

- Students will be able to understand the history of human rights.
- Students will learn to respect others caste, religion, region and culture.
- Students will be aware of their rights as Indian citizen.
- Students will be able to understand the importance of groups and communities in the society.
- Students will be able to realize the philosophical and cultural basis and historical perspectives of human rights.

**B. Tech in Electronics & Telecommunication Engineering
Curriculum for Third Year
SEMESTER-V**

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 5	BTETC501	Electromagnetic Field Theory	3	1	-	20	20	60	100	4
PCC 6	BTETC502	Digital Signal Processing	3	1	-	20	20	60	100	4
PCC 7	BTETC503	Analog Communication	3	1	-	20	20	60	100	4
PEC 2	BTETPE504	Group A	3	1	-	20	20	60	100	4
OEC 1	BTETOE505	Group B	3	1	-	20	20	60	100	4
LC	BTETL506	Digital Signal Processing Lab & Analog Communication Lab	-	-	4	60	-	40	100	2
Project	BTETM507	Mini Project – 1	-	-	4	60	-	40	100	2
Internship	BTETP408	Internship – 2 Evaluation	-	-	-	-	-	-	-	Audit
Total			15	5	8	220	100	380	700	24

SEMESTER-VI

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 8	BTETC601	Antennas and Wave Propagation	3	1	-	20	20	60	100	4
PCC 9	BTETC602	Digital Communication	3	1	-	20	20	60	100	4
PEC 3	BTETPE603	Group A	3	1	-	20	20	60	100	4
OEC 2	BTETOE604	Group B	3	1	-	20	20	60	100	4
HSSMC	BTHM605	Employability and Skill Development	3	-	-	20	20	60	100	3
LC	BTETL606	Digital Communication Lab & Professional Elective Course 3 Lab	-	-	4	60	-	40	100	2
Project	BTETM607	Mini Project – 2	-	-	4	60	-	40	100	2
Internship	BTETP608 (Internship – 3)	Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at one time).	-	-	-	-	-	-	-	Audit (evaluation will be in VII Sem.)
Total			15	4	8	220	100	380	700	23

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BTETOE604G

Acoustic Engineering

4 Credits

Course Objectives:

1. The learner develops a basic understanding of audio production equipment and software.
2. The Learner develops a basic understanding sound and acoustics
3. Learners will become proficient with an industry standard DAW user interface and related peripheral technology
4. Learners will demonstrate project management skills.

Course Outcomes:

At the end of the course, students will demonstrate their ability to:

1. understanding of audio production
2. basic understanding sound and acoustics
3. learners will come to know about Radiation and diffraction of acoustic, Cavities and waveguides, Resonators and filters

UNIT – 1 Fundamentals of Acoustics:

07 Hours

Equation of state, Equation of continuity, Euler's equation, Linearized wave equation, Speed of sound in fluids, Harmonic plane waves, Energy density, Acoustic intensity, Specific acoustic impedance, Spherical waves, Decibel scales

UNIT – 2 Transmission and reflection:

07 Hours

Transmission from one fluid to another - normal incidence, Transmission through a fluid layer - normal incidence, Transmission from one fluid to another - oblique incidence, Transmission through a fluid layer - oblique incidence, Reflection at a solid surface – normal incidence, Reflection at a solid surface – oblique incidence

UNIT – 3 Radiation and diffraction:

07 Hours

Pulsating sphere, Acoustic reciprocity, Simple sources, Acoustic dipoles, Acoustic line source, Directivity and beam patterns, Plane circular piston, Near field and far field, Acoustic radiation impedance, Phased arrays

UNIT – 4 Cavities and waveguides:

07 Hours

Resonance in pipes, Open-ended pipes, Standing waves, Absorption in pipes, Pipes with drivers

UNIT – 5 Resonators and filters:

07 Hours

Helmholtz resonator, Acoustic impedance (radiation impedance and mechanical impedance), Waves in a pipe, Acoustic filters

TEXT/REFERENCE BOOKS:

1. Kinsler and Frey, „Fundamentals of Acoustics“, 4th edition

BTHM605

Employability & Skill Development

3 Credits

Course Objectives:

1. To develop analytical abilities.
2. To develop communication skills.
3. To introduce the students to skills necessary for getting, keeping and being successful in a profession.

4. To expose the students to leadership and team-building skills.

Course Outcomes:

On completion of the course, student will be able to:

1. Have skills and preparedness for aptitude tests.
2. Be equipped with essential communication skills (writing, verbal and non-verbal)
3. Master the presentation skill and be ready for facing interviews.
4. Build team and lead it for problem solving.

UNIT – 1 Soft Skills & Communication basics:

07 Hours

Soft skills Vs hard skills, Skills to master, Interdisciplinary relevance, Global and national perspectives on soft skills, Resume, Curriculum vitae, How to develop an impressive resume, Different formats of resume – Chronological, Functional, Hybrid, Job application or cover letter, Professional presentation- planning, preparing and delivering presentation, Technical writing.

UNIT – 2

07 Hours

Interpersonal Skills: Critical Thinking, Assertiveness, Decision Making, Problem Solving, Negotiation, Building Confidence, Time Management, Personal Presentation, Assertiveness, negotiation, avoiding Stress. **Commercial Awareness:** Professional etiquettes and manners, Global negotiating and Persuading, Integrity. Global trends and statistics about civil engineering businesses.

UNIT – 3 Grammar and Comprehension:

07 Hours

English sentences and phrases, Analysis of complex sentences, Transformation of sentences, Paragraph writing, Story writing, Reproduction of a story, Letter writing, précis writing, Paraphrasing and e-mail writing.

UNIT – 4 Skills for interviews:

07 Hours

Interviews- types of interviews, preparatory steps for job interviews, interview skill tips, Group discussion- importance of group discussion, types of group discussion, difference between group discussion, panel discussion and debate, personality traits evaluated in group discussions, tips for successful participation in group discussion, Listening skills- virtues of listening, fundamentals of good listening, Non-verbal communication-body movement, physical appearance, verbal sounds, closeness, time.

UNIT – 5 Problem Solving Techniques:

07 Hours

Problem solving model: 1. Define the problem, 2. Gather information, 3. Identify various solution, 4. Evaluate alternatives, 5. Take actions, 6. Evaluate the actions.

Problem solving skills: 1. Communicate. 2. Brain storming, 3. Learn from mistakes.

TEXT/REFERENCE BOOKS:

1. R. Gajendra Singh Chauhan, Sangeeta Sharma, "Soft Skills- An integrated approach to maximize personality", ISBN: 987-81-265-5639-7, First Edition 2016, Wiley Wren and Martin, "English grammar and Composition", S. Chand publications.
2. R. S. Aggarwal, "A modern approach to verbal reasoning", S. Chand publications.
3. Philip Carter, "The Complete Book of Intelligence Test", John Willey & Sons Ltd.
4. Philip Carter, Ken Russell, "Succeed at IQ test", Kogan Page.
5. Eugene Ehrlich, Daniel Murphy, "Schaum's Outline of English Grammar", McGrawHills.
6. David F. Beer, David A. McMurrey, "A Guide to Writing as an Engineer", ISBN: 978-1-118-30027-5 4th Edition, 2014, Wiley.