

Department of Electronics and Instrumentation Engineering

Approved Course Structure

Program: B.Tech.-ELECTRONICS AND INSTRUMENTATION ENGINEERING

Regulations: SVEC-20

Mandatory Induction Program	03 weeks duration
Induction program offered before commencement of the I-Semester coursework	Physical activity
	Creative Arts
	Universal Human Values
	Literary
	Proficiency Modules
	Lectures by Eminent People
	Visits to local Areas
	Familiarization to Department/Branch and Innovations

I B.Tech. – I Semester

Sl. No.	Subject Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT1BS01	Differential Equations and Multivariable Calculus	3	-	-	3	3	30	70	100
2.	20BT1BS03	Engineering Physics	3	-	-	3	3	30	70	100
3.	20BT10201	Basic Electrical and Electronics Engineering	3	-	-	3	3	30	70	100
4.	20BT10341	Basic Civil and Mechanical Engineering	3	-	-	3	3	30	70	100
5.	20BT1BS32	Engineering Physics Lab	-	-	3	3	1.5	30	70	100
6.	20BT10231	Basic Electrical and Electronics Engineering Lab	-	-	3	3	1.5	30	70	100
7.	20BT10331	Computer Aided Engineering Drawing	-	1	4	5	3	30	70	100
8.	20BT10332	Engineering Workshop	-	-	3	3	1.5	30	70	100
9.	20BT1HSAC	Spoken English(Audit Course)	2	-	-	2	-	-	-	-
Total:			14	1	13	28	19.5	240	560	800

I B.Tech. – II Semester

Sl. No.	Subject Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT2BS01	Transformation Techniques and Linear Algebra	3	-	-	3	3	30	70	100
2.	20BT1BS02	Engineering Chemistry	3	-	-	3	3	30	70	100
3.	20BT1HS01	Communicative English	3	-	-	3	3	30	70	100
4.	20BT20241	Network Analysis	3	-	-	3	3	30	70	100
5.	20BT20541	Programming in C and Data Structures	3	-	-	3	3	30	70	100
6.	20BT1BS31	Engineering Chemistry Lab	-	-	3	3	1.5	30	70	100
7.	20BT1HS31	Communicative English Lab	-	-	3	3	1.5	30	70	100
8.	20BT20551	Programming in C and Data Structures Lab	-	-	3	3	1.5	30	70	100
9.	20BT1MC01	Universal Human Values (Mandatory Course)	2	-	-	2	-	30	-	30
Total:			17	-	09	26	19.5	270	560	830

II B.Tech I–Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (c)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT3BS02	Special functions and Complex Analysis	3	-	-	3	3	30	70	100
2.	20BT30402	Electronic Devices and Circuits	3	-	-	3	3	30	70	100
3.	20BT30404	Switching Theory and Logic Design	3	-	-	3	3	30	70	100
4.	20BT31001	Electrical and Electronic Measurements	3	-	-	3	3	30	70	100
5.	20BT31002	Transducers in Instrumentation	3	-	-	3	3	30	70	100
6.	20BT30432	Electronic Devices and Circuits Lab	-	-	3	3	1.5	30	70	100
7.	20BT31031	Instrumentation Workshop	-	-	3	3	1.5	30	70	100
8.	20BT31032	Measurements and Transducers Lab	-	-	3	3	1.5	30	70	100
9.	20BT3HS31	Soft Skills Lab	-	1	2	3	2	30	70	100
Total							21.5	270	630	900
10.	20BT3MC01	Environmental Science	2	-	-	2	-	30	-	30

II B.Tech II–Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (C)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT40402	Electronic Circuit Analysis and Design	3	-	-	3	3	30	70	100
2.	20BT30403	Signals and Systems	3	-	-	3	3	30	70	100
3.	20BT40403	Linear and Digital IC Applications	3	-	-	3	3	30	70	100
4.	20BT41001	Industrial Instrumentation	3	-	-	3	3	30	70	100
5.	Open Elective-1		3	-	-	3	3	30	70	100
6.	20BT40433	Electronic Circuit Analysis and Design Lab	-	-	3	3	1.5	30	70	100
7.	20BT50432	Linear and Digital IC Applications Lab	-	-	3	3	1.5	30	70	100
8.	20BT41031	Industrial Instrumentation Lab	-	-	3	3	1.5	30	70	100
9.	20BT40432	Digital Design Lab	-	-	2	3	2	30	70	100
Total							21.5	270	630	900
10.	20BT315AC	Design Thinking	2	-	-	2	-	-	-	-

III B.Tech I–Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (C)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT5HS02	Principles of Business Economics and Accountancy	3	-	-	3	3	30	70	100
2.	20BT40201	Control Systems	3	-	-	3	3	30	70	100
3.	20BT60402	Digital Signal Processing	3	-	-	3	3	30	70	100
4.	Open Elective-2		3	-	-	3	3	30	70	100
5.	Professional Elective- 1		3	-	-	3	3	30	70	100
	20BT50442	Principles of Communications								
	20BT50501	Computer Networks								
	20BT50341	Thermodynamics and Fluid Mechanics								
	20BT51001	Intelligent Control								
6.	20BT50251	Control Systems lab	-	-	3	3	1.5	30	70	100
7.	20BT51031	Signal Processing Lab	-	-	3	3	1.5	30	70	100
8.	20BT51032	Automotive Instrumentation	2	-	-	2	2	30	70	100
9.	20BT51033	Summer Internship					1.5	-	100	100
Total							21.5	240	660	900
10.	20BT503AC	Foundations of Entrepreneurship	2	-	-	2	-	-	-	-

III B.Tech II–Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (C)	Scheme of Examination		
			L	T	P	Total		Max. Marks		
								Int. Marks	Ext. Marks	Total Marks
1.	20BT5HS01	Organizational Behavior	3	-	-	3	3	30	70	100
2.	20BT60443	Microcontrollers	3	-	-	3	3	30	70	100
3.	20BT61001	Process Control Instrumentation	3	-	-	3	3	30	70	100
4.	Professional Elective-2		3	-	-	3	3	30	70	100
	20BT60203	Advanced Control Systems								
	20BT50403	FPGA Architectures and Applications								
	20BT61002	Optoelectronics and Laser Instrumentation								
	20BT61003	Industrial Data Communications								
5.	Professional Elective-3		3	-	-	3	3	30	70	100
	20BT60241	Renewable Energy Sources								
	20BT60404	Digital IC Design								
	20BT60406	Image Processing								
	20BT61004	Power Plant Instrumentation								
6.	Inter disciplinary Elective-1		3	-	-	3	3	30	70	100
	20BT60342	Industrial Safety and Maintenance Engineering								
	20BT40501	Database Management System								
	20BT43101	Artificial Intelligence								
	20BT21501	Object Oriented Programming Through Java								
7.	20BT60432	Microcontrollers Lab	-	-	3	3	1.5	30	70	100
8.	20BT61031	Process Control Lab	-	-	3	3	1.5	30	70	100
9.	20BT51551	Internet of Things Lab		1	2	3	2	30	70	100
Total							23	270	630	900
10.	20BT5MC01	Professional Ethics	2	-	-	2	-	30	-	30

IV B.Tech I–Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (C)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT71001	Biomedical Instrumentation	3	-	-	3	3	30	70	100
2.	20BT71002	Programmable Logic Controllers	3	-	-	3	3	30	70	100
3.	Professional Elective-4		3	-	-	3	3	30	70	100
	20BT70401	Embedded Systems								
	20BT60409	Wireless Sensor Networks								
	20BT71003	Aircraft Instrumentation								
	20BT71004	Computer Control of Process								
4.	Professional Elective-5		3	-	-	3	3	30	70	100
	20BT70403	Advanced Digital Signal Processing								
	20BT71005	Instrumentation in Process Industries								
	20BT71006	SCADA and DCS								
	20BT71007	Analytical Instrumentation								
5.	Inter disciplinary Elective-2		3	-	-	3	3	30	70	100
	20BT60201	Power Electronics								
	20BT60343	Robotics and Automation								
	20BT60341	Biomechanics								
	20BT60501	Machine Learning								
6.	20BT71031	Biomedical Instrumentation Lab	-	-	3	3	1.5	30	70	100
7.	20BT71032	Industrial Automation Lab	-	-	3	3	1.5	30	70	100
8.	20BT50405	VLSI Design	2	-	-	2	2	30	70	100
9.	20BT71033	Summer Internship					1.5	-	100	100
Total							21.5	240	660	900
10.	20BT710AC	Process Plant Layout and Piping Design	2	-	-	2	-	-	-	-

IV B.Tech II–Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (C)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT81031	Project Work	-	-	-	-	12	100	100	200
2.	20BT81032	Internship	-	-	-	-	-	-	-	-
Total			-	-	-	-	12	100	100	200

**LIST OF COURSES FOR
OPEN ELECTIVE-1 AND OPEN ELECTIVE-2**

Course Code	Open Elective -1	Course Code	Open Elective -2
20BT4BS01	Material Science	20BT4HS01	Banking and Insurance
20BT4HS02	Business Communication and Career Skills	20BT4HS03	Cost Accounting and Financial Management
20BT4HS04	Entrepreneurship for Micro, Small and Medium Enterprises	20BT4HS05	Gender and Environment
20BT4HS06	German Language	20BT4HS07	Indian Economy
20BT4HS08	Indian History	20BT4HS09	Life Skills
20BT4HS10	Personality Development	20BT4HS11	Indian Tradition and Culture
20BT4HS12	Women Empowerment	20BT4HS13	Constitution of India
20BT40205	Reliability and Safety Engineering	20BT50106	Disaster Mitigation and Management
20BT40105	Environmental Pollution and Control	20BT50107	Sustainable Engineering
20BT40106	Planning for Sustainable Development	20BT50108	Contract Laws and Regulations
20BT40107	Rural Technology	20BT50310	Global Strategy and Technology
20BT40305	Human Resource Management	20BT50311	Management Science
20BT50506	Ethical Hacking	20BT40502	Cyber Laws and Security
20BT51205	AI in Healthcare	20BT50206	Intellectual Property Rights
20BT51501	Bioinformatics	20BT50406	Green Technologies



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