



SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)

Sree Sainath Nagar, Tirupati

Department of Electronics and Instrumentation Engineering

Approved Course Structure

Program: B.Tech.- Electronics and Instrumentation Engineering

Regulations: SVEC-19

Mandatory Induction Program	03 weeks duration
Induction program offered before commencement of the I-Semester course work	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.	Course Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	19BT1BS01	Differential Equations and Multivariable Calculus	3	1	-	4	4	40	60	100
2.	19BT1BS02	Biology for Engineers	2	-	-	2	2	40	60	100
3.	19BT1BS03	Engineering Physics	3	-	-	3	3	40	60	100
4.	19BT10341	Basic Civil and Mechanical Engineering	3	-	-	3	3	40	60	100
5.	19BT10201	Basic Electrical and Electronics Engineering	3	-	-	3	3	40	60	100
6.	19BT1BS31	Engineering Physics Lab	-	-	2	2	1	50	50	100
7.	19BT10231	Basic Electrical and Electronics Engineering Lab	-	-	2	2	1	50	50	100
8.	19BT20331	Engineering Workshop	-	-	2	2	1	50	50	100
Total:			14	1	6	21	18	350	450	800
9.	19BT1AC01	Spoken English	2	-	-	2	-	-	-	-

I B.Tech. – II Semester

Sl. No.	Course Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	19BT2BS01	Transformation Techniques and Linear Algebra	3	1	-	4	4	40	60	100
2.	19BT1BS04	Engineering Chemistry	3	-	-	3	3	40	60	100
3.	19BT1HS01	Communicative English	3	-	-	3	3	40	60	100
4.	19BT10501	Programming for Problem Solving	3	1	-	4	4	40	60	100
5.	19BT20241	Network Analysis	3	1	-	4	4	40	60	100
6.	19BT1BS32	Engineering Chemistry Lab	-	-	2	2	1	50	50	100
7.	19BT1HS31	Communicative English Lab	-	-	2	2	1	50	50	100
8.	19BT10331	Computer Aided Engineering Drawing	-	1	2	3	2	50	50	100
9.	19BT10531	Programming for Problem Solving Lab	-	-	2	2	1	50	50	100
10.	19BT20251	Network Analysis Lab	-	-	2	2	1	50	50	100
Total:			15	4	10	29	24	450	550	1000

II B.Tech. – I Semester

Sl. No.	Course Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	19BT3BS02	Special functions and Complex Analysis	3	1	-	4	4	40	60	100
2.	19BT30402	Electronic Devices and Circuits	3	-	-	3	3	40	60	100
3.	19BT30404	Switching Theory and Logic Design	3	-	-	3	3	40	60	100
4.	19BT31001	Electrical and Electronic Measurements	3	1	-	4	4	40	60	100
5.	19BT31002	Transducers in Instrumentation	3	-	-	3	3	40	60	100
6.	19BT3HS31	Soft Skills Lab	-	-	2	2	1	50	50	100
7.	19BT30432	Electronic Devices and Circuits Lab	-	-	2	2	1	50	50	100
8.	19BT31031	Instrumentation Workshop	-	-	2	2	1	50	50	100
9.	19BT31032	Measurements and Transducers Lab	-	-	2	2	1	50	50	100
Total:			15	2	8	25	21	400	500	900
10.	19BT3MC01	Environmental Science	2	-	-	2	-	40	-	40

II B.Tech. – II Semester

Sl. No.	Course Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	19BT50201	Control Systems	3	-	-	3	3	40	60	100
2.	19BT30403	Signals and Systems	3	-	-	3	3	40	60	100
3.	19BT40402	Electronic Circuit Analysis and Design	3	1	-	4	4	40	60	100
4.	19BT40403	Linear and Digital IC Applications	3	-	-	3	3	40	60	100
5.	19BT41001	Industrial Instrumentation	3	-	-	3	3	40	60	100
6.	Open Elective – 1		3	-	-	3	3	40	60	100
7.	19BT40432	Electronic Circuit Analysis and Design Lab	-	-	2	2	1	50	50	100
8.	19BT40433	Linear and Digital IC Applications Lab	-	-	2	2	1	50	50	100
9.	19BT41031	Industrial Instrumentation Lab	-	-	2	2	1	50	50	100
Total:			18	1	6	25	22	390	510	900
10.	19BT315AC	Design Thinking	2	-	-	2	-	-	-	-

III B.Tech. – I Semester

Sl. No.	Course Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	19BT50402	Digital Signal Processing	3	-	-	3	3	40	60	100
2.	19BT50442	Principles of Communications	3	-	-	3	3	40	60	100
3.	19BT30502	Computer Organization	3	-	-	3	3	40	60	100
4.	Open Elective- 2		3	-	-	3	3	40	60	100
5.	Professional Elective-1		3	-	-	3	3	40	60	100
	19BT50403	VLSI Design								
	19BT40501	Computer Networks								
	19BT51001	Optoelectronics and Laser Instrumentation								
	19BT51002	Intelligent Control								
6.	Inter Disciplinary Elective- 1		3	-	-	3	3	40	60	100
	19BT50341	Industrial Safety and Maintenance Engineering								
	19BT50344	Thermodynamics and Fluid Mechanics								
	19BT50503	Artificial Intelligence								
	19BT21501	Object Oriented Programming Through Java								
7.	19BT61531	Internet of Things Lab	-	1	2	3	2	50	50	100
8.	19BT51031	Signal Processing Lab	-	-	2	2	1	50	50	100
9.	19BT51032	Socially Relevant Project-1	-	-	-	-	1	50	50	100
Total:			18	1	4	23	22	390	510	900
10.	19BT503AC	Foundations of Entrepreneurship	2	-	-	2	-	-	-	-

III B.Tech. – II Semester

Sl. No.	Course Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	19BT6HS01	Principles of Business Economics and Accountancy	3	-	-	3	3	40	60	100
2.	19BT60402	Microcontrollers	3	-	-	3	3	40	60	100
3.	19BT61001	Process Control	3	-	-	3	3	40	60	100
4.	Professional Elective-2		3	-	-	3	3	40	60	100
	19BT60203	Advanced Control Systems								
	19BT50406	FPGA Architectures and Applications								
	19BT61002	Analytical Instrumentation								
	19BT61003	Industrial Data Communications								
5.	Professional Elective-3		3	-	-	3	3	40	60	100
	19BT50343	Robotics and Automation								
	19BT60405	Digital IC Design								
	19BT60407	Image Processing								
	19BT61004	Power Plant Instrumentation								
6.	Interdisciplinary Elective-2		3	-	-	3	3	40	60	100
	19BT60201	Power Electronics								
	19BT60241	Renewable Energy Sources								
	19BT60341	Biomechanics								
	19BT50501	Machine Learning								
7.	19BT60432	Microcontrollers Lab	-	-	2	2	1	50	50	100
8.	19BT61031	Process Control Lab	-	-	2	2	1	50	50	100
9.	19BT61032	Socially Relevant Project-2	-	-	-	-	1	50	50	100
Total:			18	0	4	22	21	390	510	900
10.	19BT5MC01	Universal Human Values	2	-	-	2	-	40	-	40

IV B.Tech. – I Semester

Sl. No.	Course Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	19BT6HS02	Organizational Behavior	3	-	-	3	3	40	60	100
2.	19BT71001	Biomedical Instrumentation	3	-	-	3	3	40	60	100
3.	19BT71002	PLC and SCADA	3	-	-	3	3	40	60	100
4.	Professional Elective-4									
	19BT70401	Embedded Systems								
	19BT70541	Wireless Sensor Networks	3	-	-	3	3	40	60	100
	19BT71003	Aircraft Instrumentation								
	19BT71004	Computer Control of Process								
5.	Professional Elective-5									
	19BT60403	Advanced Digital Signal Processing								
	19BT71005	Instrumentation in Process Industries	3	-	-	3	3	40	60	100
	19BT71006	Process Modeling, Simulation and Control								
	19BT71007	System Design using Microcontrollers								
6.	19BT7MOOC	MOOC	-	-	-	-	3	-	100	100
7.	19BT71031	Biomedical Instrumentation Lab	-	-	2	2	1	50	50	100
8.	19BT71032	Industrial Automation Lab	-	-	2	2	1	50	50	100
9.	19BT71033	Internship	-	-	-	-	2	-	100	100
Total:			15	-	4	19	22	300	600	900
10.	19BT710AC	Process Plant Layout and Piping Design	2	-	-	2	-	-	-	-

IV B.Tech. – II Semester

Sl. No.	Course Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	19BT81031	Project Work	-	-	-	-	10	100	100	200
Total			-	-	-	-	10	100	100	200

LIST OF COURSES FOR

OPEN ELECTIVE-1 and OPEN ELECTIVE-2

Course Code	Open Elective -1	Course Code	Open Elective -2
19BT4BS01	Material Science	19BT4HS01	Banking and Insurance
19BT4HS02	Business Communication and Career Skills	19BT4HS03	Cost Accounting and Financial Management
19BT4HS04	Entrepreneurship for Micro, Small and Medium Enterprises	19BT4HS05	Gender and Environment
19BT4HS06	German Language	19BT4HS07	Indian Economy
19BT4HS08	Indian History	19BT4HS09	Life Skills
19BT4HS10	Personality Development	19BT4HS11	Professional Ethics
19BT4HS12	Women Empowerment	19BT4HS13	Indian Tradition and Culture
19BT4HS14	Constitution of India	19BT40106	Disaster Mitigation and Management
19BT40205	Reliability and Safety Engineering	19BT40107	Sustainable Engineering
19BT50107	Environmental Pollution and Control	19BT40108	Contract Laws and Regulations
19BT50108	Planning for Sustainable Development	19BT40306	Global Strategy and Technology
19BT50109	Rural Technology	19BT40307	Management Science
19BT50505	Ethical Hacking	19BT40504	Cyber Laws and Security
19BT51207	AI in Healthcare	19BT50208	Intellectual Property Rights
19BT51506	Bioinformatics	19BT50409	Green Technologies


MINOR/HONORS DEGREE
IN SENSORS and CONTROL SYSTEMS

Semester	Course Code	Course Title		Contact Periods per week				C	Scheme of Examination Max. Marks		
				L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
III B. Tech. I Semester	19BT50201	Control Systems	Minor	3	-	-	3	3	40	60	100
	19BT51003	Advanced Sensors	Honor	3	-	-	3	3	40	60	100
	19BT51004	Fundamentals of Micro Electro Mechanical Systems	Honor	3	-	-	3	3	40	60	100
	19BT51005	Fundamentals of Actuators	Minor	3	-	-	3	3	40	60	100
	19BT51006	Sensors	Minor	2	-	-	2	2	40	60	100
	19BT51033	Sensors Lab	Minor	-	-	2	2	1	50	50	100
III B. Tech. II Semester	19BT60206	Advanced Control System	Minor/ Honor	3	-	-	3	3	40	60	100
	19BT61005	Digital Control System	Minor/ Honor	3	-	-	3	3	40	60	100
	19BT61006	SMART Sensors	Minor/ Honor	3	-	-	3	3	40	60	100
IV B. Tech. I Semester	19BT71008	Fractional Calculus and Control	Minor/ Honor	3	-	-	3	3	40	60	100
	19BT71009	Multi-Sensor Data Fusion	Minor/ Honor	3	-	-	3	3	40	60	100
	19BT71010	Robust & Optimal Control	Minor/ Honor	3	-	-	3	3	40	60	100

Note: If any of the student pursued a course from the above list in their curriculum then, he/she is not eligible to opt for the same in minor/honors degree.

Minor : 6T (17 Credits) + 1L (1 Credit)

Honor : 6T (18 Credits)


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