



**SREE VIDYANIKETHAN ENGINEERING COLLEGE  
(AUTONOMOUS)**

SREE SAINATH NAGAR, A. RANGAMPET-517 102

**Agenda for 13<sup>th</sup> Meeting of Board of Studies for B. Tech. (Electronics and Instrumentation) on 10-07-2021 at 2:30 PM**

1. Action taken report on minutes/resolutions of 12<sup>th</sup> BOS meeting.
2. Report on implementation of Autonomy with respect to syllabi & academic regulations for II-B.Tech (under SVEC19) and I B.Tech (under SVEC-20 regulations).
3. Course Structure, Syllabi with Course Objectives, Course Outcomes, for the Courses of III & IV B.Tech including Minor & Honors Degrees(Under SVEC-19).
4. Course Structure, Syllabi with Course Objectives, Course Outcomes, for the Courses of II, III & IV B.Tech(Under SVEC-20) and Course structure of Minor & Honors Degrees (Under SVEC-20).
5. Regulation-wise, list of courses in which the content of the syllabus is changed more than 20%.
6. List of new courses introduced in SVEC-19 and SVEC-20.
7. Panel of Examiners for Question paper setting.
8. Substitute Courses.
9. Appraisal on research, teaching, extension and other academic activities, achievements of the Department.
10. Any other item.

*Y. Dilip Kumar*  
**Chairperson, BoS in EIE**

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**Department of Electronics and Instrumentation Engineering**

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**Action Taken Report on minutes/ resolutions of**  
**12<sup>th</sup> BOS meeting**

**1. Course Structure for I B.Tech (I & II Semesters) of Electronics and Instrumentation Engineering under SVEC-20 Curriculum.**

**Resolution:** The following suggestions were given by the members to prepare and implement the curriculum from the academic year 2019-20.

1. The External members have suggested to consider Digital Logic Design(DLD) as a course under program core rather than Engineering science .
2. Any other Engineering science course may be adopted in place of DLD. As DLD is a core course for EIE students, it needn't be offered in first year. Further, they suggested moving this course to second year.
3. DLD may be replaced with a course titled Basic Electrical and Electronics Engineering as in SVEC-19 regulations.
4. Dr. S. Mourougapragash, Associate Professor, Pondicherry Engineering College, suggested to introduce a course on Python programming in the curriculum to meet industrial needs, for the benefit of students regarding placements.
5. Dr. G. P. Ramesh suggested to frame course outcomes for each unit while framing the syllabus, so that, the faculty members will have an understanding to what level the course can be dealt with.

Action Taken:

As authorized, the Chairperson, BOS has adapted the following improvements suggested by External members on the course structure.

1. A course titled Basic Electrical and Electronics Engineering was adopted in place of Digital Logic Design(DLD) under Engineering sciences category.
2. While preparing the syllabus, the course outcomes were framed based on the knowledge areas almost for each unit separately.

**2. Any other item**

Meeting concluded with thanks to the Chair.

  
**Chairperson, BoS in EIE**



**SREE VIDYANIKETHAN ENGINEERING COLLEGE  
(Autonomous)**

**SREE SAINATH NAGAR, TIRUPATI - 517 102, A.P.**

**Department of Electronics and Instrumentation Engineering**

**Report on implementation of autonomy with respect to syllabi & academic regulations for II B. Tech (under SVEC19) and I B.Tech under SVEC-20 regulations.**

1. SVEC19 Regulations for B. Tech. Program are implemented successfully at II B. Tech. level.
2. SVEC 20 Regulations for B. Tech. Program are implemented successfully at I B. Tech. level.

*Y. Sriharsha*  
**Chairperson, BOS in EIE**

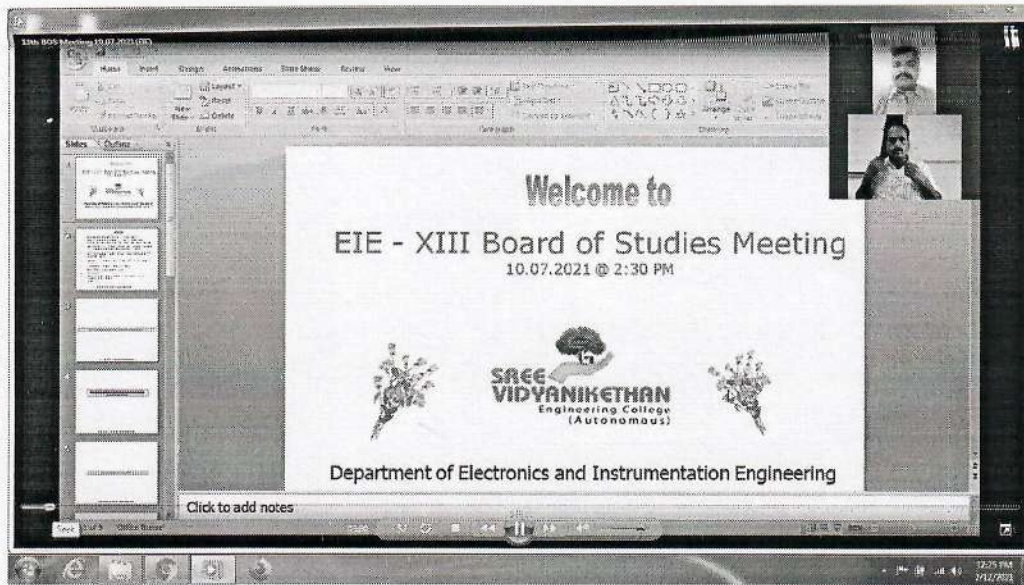
**Department of Electronics and Instrumentation Engineering**  
**13<sup>th</sup> Board of Studies Meeting held on 10<sup>th</sup> July 2021 at 02.30 PM**

**Minutes**

**Members Present:**

1	Dr. Y. Dileep Kumar Associate Professor & HOD Department of EIE Sree Vidyanikethan Engineering College A.Rangampet	Chairman
2	Dr. G. Sreenivasulu Professor of ECE SVU College of Engineering Tirupati	External Member (Academics)
3	Dr. G. P. Ramesh Professor & Head, Department of Electronics and Communication Engineering, St.Peters Institute Of Higher Education and Research, Avadi, Chennai.	External Member (Academics)
4	Dr. S. Mourougapragash Associate Professor Department of Electronics and Instrumentation Engineering, Pondicherry Engineering College, Puducherry.	External Member (Academics)
5	Mr. C. Ravindra Murthy Assistant Professor Department of EIE Sree Vidyanikethan Engineering College A.Rangampet	Internal Member
6	Mr. G. Hemanth Kumar Assistant Professor Department of EIE Sree Vidyanikethan Engineering College A.Rangampet	Internal Member
7	Mr. K. Ayyappa Swamy Assistant Professor Department of EIE Sree Vidyanikethan Engineering College A.Rangampet	Internal Member
8	Mr. C. Somasundar Reddy Assistant Professor Department of EIE Sree Vidyanikethan Engineering College A.Rangampet	Internal Member
9	Ms. N. Harathi Assistant Professor Department of EIE Sree Vidyanikethan Engineering College A.Rangampet	Internal Member

13th Meeting of Board of Studies of Electronics and Instrumentation Engineering (EIE) was conducted through online video conferencing using ZOOM platform. The screenshots taken during the meeting is shown below:



The Chairman welcomed the Members for the 13th meeting of the Board of Studies in Electronics and Instrumentation Engineering and the BOS discussed and resolved the following agenda items:

**Action taken report on minutes / resolutions of BOS Meeting held on 09-01-2021**

The Chairman BOS apprised the members the action taken on the minutes/resolutions of BOS meeting held on 09th January 2021. After deliberations the members agreed with proceedings and approved the action taken against the suggestions made in the previous meeting.

**1. Report on implementation of Autonomy with respect to syllabi & academic regulations for II-B.Tech (under SVEC19) and I B.Tech (under SVEC-20 regulations).**

Chairman BOS presented a report on implementation of autonomy to the members. The board has congratulated the college authorities for successful implementation of SVEC 19 course structure & syllabi for II years and SVEC 20 regulations and course structure & syllabi for I years. The members expressed satisfaction over it.

**2. Course Structure, Syllabi with Course Objectives, Course Outcomes, for the Courses of III & IV B.Tech including Minor & Honors Degrees (Under SVEC-19).**

The members agreed with proceedings and approved syllabi and course structure for the Courses of III & IV B.Tech including Minor & Honors Degrees (Under SVEC-19) with the following suggestions:

**III B.Tech, I sem (EIE)**

**Digital Signal Processing**

- Incorporate Analysis of LTI Systems in Unit-I

**IV B.Tech, I sem (EIE)**

**FRACTIONAL CALCULUS AND CONTROL (Honor Course)**

- Incorporate Fractional Order Controller topic in Unit -I

**IV B.Tech, I sem (EIE)**

**Power Plant Instrumentation**

- Incorporate P & ID Symbols topic in Unit -I

**IV B.Tech, I sem (EIE)**

**Analytical Instrumentation**

- Shifted Unit- II as Unit -V.

**IV B.Tech, I sem (EIE)**

**Computer Control of Process**

- Incorporate Kalman's Controller Algorithm topic in Unit -III

**3. Course Structure, Syllabi with Course Objectives, Course Outcomes, for the Courses of II, III & IV B.Tech (Under SVEC-20) and Course structure of Minor & Honors Degrees (Under SVEC-20).**

Hon'ble members approved the syllabus and course structure after discussions.

**4. Regulation-wise, list of courses in which the content of the syllabus is changed more than 20%.**

Members noted the list and appreciated the efforts.

**5. List of new courses introduced in SVEC-19 and SVEC-20.**

Members noted the list of new courses introduced and suggested to introduce few Industry Oriented courses related to Industry to fill the gap between Institute and Industry.

**6. Panel of Examiners for Question paper setting.**

Members resolved to authorize the Chairman, BOS in Electronics and Instrumentation Engineering (EIE) to finalize the panel of examiners for Question paper setting as and when required and forward the same to the Chairman, Academic Council for further action.

**7. Substitute Courses.**

Members resolved to authorize the Chairman, BOS in Electronics and Instrumentation Engineering (EIE) to finalize the substitute subjects as and when required and forward the same to the Chairman, Academic Council for further action.

**8. Appraisal on research, teaching, extension and other academic activities, achievements of the Department.**

The Chairman BOS has briefed the members about the research initiatives, such as thrust areas of research, Patents and research project sanctioned. The members appreciated progress made by the department in research, teaching, extension and other academic activities, achievements.

**9. Any other item.**

The Board authorized the chairman BOS to effect any minor changes as per the need in syllabi and later intimate these changes to the members of the BOS.

The chairman BOS profusely thanked the members for their support and guidance

Meeting concluded with thanks to the Chair.

S. No.	Name of the Member	Designation
1	Dr. Y. Dileep Kumar	Chairman
2	Dr. G. Sreenivasulu	External Member (Academics)
3	Dr. G.P. Ramesh	External Member (Academics)
4	Dr. S. Mourougapragash	External Member (Academics)
5	Mr. C. Ravindra Murthy	Internal Member
6	Mr. G. Hemanth Kumar	Internal Member
7	Mr. K. Ayyappa Swamy	Internal Member
8	Mr. C. Somasundar Reddy	Internal Member
9	Ms. N. Harathi	Internal Member

*Y. Dileep Kumar*

Dr. Y.Dileep Kumar  
Chairman, BOS in E.I.E



**APPROVED COURSE STRUCTURE**

**Program:** B.Tech.- Electronics and Instrumentation Engineering

**Regulations:** SVEC-19

**III 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.	19BT50402	Digital Signal Processing	3	-	-	3	3	40	60	100
2.	19BT50442	Principles of Communications	3	-	-	3	3	40	60	100
3.	19BT50207	Computer Organization and Architecture	3	-	-	3	3	40	60	100
<b>Professional Elective-1</b>										
4.	19BT50403	VLSI Design	3	-	-	3	3	40	60	100
	19BT40501	Computer Networks								
	19BT51001	Optoelectronics and Laser Instrumentation								
	19BT51002	Intelligent Control								
5.	<b>Open Elective-2</b>		3	-	-	3	3	40	60	100
<b>Inter Disciplinary Elective-1</b>										
6.	19BT50341	Industrial Safety and Maintenance Engineering	3	-	-	3	3	40	60	100
	19BT50343	Thermodynamics and Fluid Mechanics								
	19BT50502	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
<b>Total:</b>			<b>18</b>	<b>1</b>	<b>4</b>	<b>23</b>	<b>22</b>	<b>390</b>	<b>510</b>	<b>900</b>
10.	19BT503AC	Foundations of Entrepreneurship	2	-	-	2	-	-	-	-

**III 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.	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 Instrumentation	3	-	-	3	3	40	60	100
<b>Professional Elective-2</b>										
4.	19BT60203	Advanced Control Systems	3	-	-	3	3	40	60	100
	19BT50406	FPGA Architectures and Applications								
	19BT61002	Analytical Instrumentation								
	19BT61003	Industrial Data Communications								
<b>Professional Elective-3</b>										
5.	19BT50342	Robotics and Automation	3	-	-	3	3	40	60	100
	19BT60405	Digital IC Design								
	19BT60407	Image Processing								
	19BT61004	Power Plant Instrumentation								
<b>Inter Disciplinary Elective-2</b>										
6.	19BT60201	Power Electronics	3	-	-	3	3	40	60	100
	19BT60241	Renewable Energy Sources								
	19BT60341	Biomechanics								
	19BT60502	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
<b>Total:</b>			<b>18</b>	<b>0</b>	<b>4</b>	<b>22</b>	<b>21</b>	<b>390</b>	<b>510</b>	<b>900</b>
10.	19BT5MC01	Universal Human Values	2	-	-	2	-	40	-	40

**IV 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.	19BT6HS02	Organizational Behavior	3	-	-	3	3	40	60	100
2.	19BT71001	Biomedical Instrumentation	3	-	-	3	3	40	60	100
3.	19BT71002	Programmable Logic Controller	3	-	-	3	3	40	60	100
<b>Professional Elective-4</b>										
4.	19BT70401	Embedded Systems								
	19BT60410	Wireless Sensor Networks	3	-	-	3	3	40	60	100
	19BT71003	Aircraft Instrumentation								
	19BT71004	Computer Control of Processes								
<b>Professional Elective-5</b>										
5.	19BT60403	Advanced Digital Signal Processing								
	19BT71005	Instrumentation in Process Industries	3	-	-	3	3	40	60	100
	19BT71006	Identification and Adaptive Control								
	19BT71007	Biomedical Signal Processing								
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
<b>Total:</b>			<b>15</b>	<b>-</b>	<b>4</b>	<b>19</b>	<b>22</b>	<b>300</b>	<b>600</b>	<b>900</b>
10.	19BT710AC	Process Plant Layout and Piping Design	2	-	-	2	-	-	-	-

### IV 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.	19BT81031	Project Work	-	-	-	-	10	100	100	200
<b>Total:</b>			-	-	-	-	<b>10</b>	<b>100</b>	<b>100</b>	<b>200</b>

### 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

In addition to the Major Degree, Students have an opportunity to pursue either Minor Degree or Honors Degree as per the eligibility criteria mentioned in Academic Regulations Point No.: 14 & 15.

**Honors Degree:** Honors degree is awarded to the students who has undergone additional learning for 18 credits in the same discipline.

### **Honors in Electronics and Instrumentation Engineering**

Semester	COURSE CODE	Course Title	Contact Periods per week			C
			L	T	P	
III B.Tech. I-Sem (2 Theory)	19BT51003	Advanced Sensors	3	-	-	3
	19BT51004	Wearable sensors and its application	3	-	-	3
	19BT51005	Digital Control Systems	3	-	-	3
	19BT51006	Sensors and Actuators	3	-	-	3
III B.Tech. II-Sem (2 Theory)	19BT61005	Smart sensors	3	-	-	3
	19BT61006	Fractional Calculus and Control	3	-	-	3
	19BT61007	MEMS Technology	3	-	-	3
	19BT61008	Multisensor data fusion	3	-	-	3
IV B.Tech. I-Sem (2 Theory)	19BT71008	Sensors for structural health monitoring	3	-	-	3
	19BT71009	Wearable technology and IOT	3	-	-	3
	19BT71010	Robust & Optimal Control	3	-	-	3
	19BT71011	Telemetry and Telecontrol	3	-	-	3

**Note:** If any student has chosen a course from the above list in their regular curriculum then, he/she is not eligible to opt the same course/s for the Honors degree. It is the responsibility of the student to acquire/complete prerequisite before taking the respective course.

**Minor Degree:** Minor degree is awarded to the students who has undergone additional learning for 18 credits in any discipline other than parent discipline.

## **Minor Degrees Offered under SVEC-19 Regulations**

<b>Offering Department</b>	<b>Title of the Minor</b>	<b>Students of Eligible Branches</b>
CSE	Artificial Intelligence and Machine Learning	All branches except CSE, IT and CSSE
IT	Internet of Things	All branches except IT
CSSE	Cyber Security	All branches except CSE, IT and CSSE
ECE	VLSI & Embedded Systems	All branches except ECE
EEE	Electrical Engineering	All branches except EEE
EIE	Instrumentation and Control Engineering	All branches except EIE
CE	Sustainable Engineering	All branches except CE
ME	Robotics	All branches except ME

**LIST OF NEW COURSES INTRODUCED**

**Program: B.Tech.- Electronics and Instrumentation Engineering**

**Regulations: SVEC-19 (III-I B.Tech-IV-II semester)**

S. No.	Course Code	Name of the course
1.	19BT50502	Artificial Intelligence
2.	19BT61531	Internet of Things Lab
3.	19BT51032	Socially Relevant project-1
4.	19BT503AC	Foundations of Entrepreneurship
5.	19BT61003	Industrial Data Communications
6.	19BT60402	Microcontrollers
7.	19BT50406	FPGA Architectures and applications
8.	19BT60405	Digital IC Design
9.	19BT60502	Machine Learning
10.	19BT60432	Microcontrollers lab
11.	19BT61032	Socially Relevant project-2
12.	19BT5MC01	Universal Human Values
13.	19BT71002	Programmable Logic Controller
14.	19BT60410	Wireless Sensor Networks
15.	19BT71006	Identification and Adaptive Control
16.	19BT71033	Internship
17.	19BT710AC	Process Plant Layout and Piping Design
18.	19BT51041	PLC and SCADA
19.	19BT61041	Sensors and Applications
20.	19BT51003	Advanced Sensors
21.	19BT51004	Wearable sensors and its application
22.	19BT51005	Digital Control Systems
23.	19BT51006	Sensors and Actuators
24.	19BT61005	Smart sensors
25.	19BT61006	Fractional Calculus and Control
26.	19BT61007	MEMS Technology
27.	19BT61008	Multisensor data fusion
28.	19BT71008	Sensors for structural health monitoring
29.	19BT71009	Wearable technology and IOT
30.	19BT71010	Robust & Optimal Control

*Y. Dileep Kumar*

Dr. Y.Dileep Kumar  
Chairman, BOS in E.I.E

**APPROVED COURSE STRUCTURE**

**Program: B.Tech.- Electronics and Instrumentation Engineering**

**Regulations: SVEC-20 (II-I B. Tech – IV-II Semester)**

**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
<b>Total</b>							<b>21.5</b>	<b>270</b>	<b>630</b>	<b>900</b>
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.	<b>Open Elective-1</b>		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
<b>Total</b>							<b>21.5</b>	<b>270</b>	<b>630</b>	<b>900</b>
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.	<b>Open Elective-2</b>		3	-	-	3	3	30	70	100
5.	<b>Professional Elective- 1</b>		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
<b>Total</b>							<b>21.5</b>	<b>240</b>	<b>660</b>	<b>900</b>
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 Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT5HS01	Organizational Behavior	3	-	-	3	3	30	70	100
2.	20BT60402	Microcontrollers	3	-	-	3	3	30	70	100
3.	20BT61001	Process Control Instrumentation	3	-	-	3	3	30	70	100
4.	<b>Professional Elective-2</b>		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.	<b>Professional Elective-3</b>		3	-	-	3	3	30	70	100
	20BT60241	Renewable Energy Sources								
	20BT60404	Digital IC Design								
	20BT60406	Image Processing								
	20BT61004	Power Plant Instrumentation								
6.	<b>Inter disciplinary Elective-1</b>		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
<b>Total</b>							<b>23</b>	<b>270</b>	<b>630</b>	<b>900</b>
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.	<b>Professional Elective-4</b>		3	-	-	3	3	30	70	100
	20BT70401	Embedded Systems								
	20BT60409	Wireless Sensor Networks								
	20BT71003	Aircraft Instrumentation								
	20BT71004	Computer Control of Process								
4.	<b>Professional Elective-5</b>		3	-	-	3	3	30	70	100
	20BT70403	Advanced Digital Signal Processing								
	20BT71005	Instrumentation in Process Industries								
	20BT71006	SCADA and DCS								
	20BT71007	Analytical Instrumentation								
5.	<b>Inter disciplinary Elective-2</b>		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
<b>Total</b>							<b>21.5</b>	<b>240</b>	<b>660</b>	<b>900</b>
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	-	-	-	-	-	-	-	-
<b>Total</b>			-	-	-	-	<b>12</b>	<b>100</b>	<b>100</b>	<b>200</b>

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

<b>Course Code</b>	<b>Open Elective -1</b>	<b>Course Code</b>	<b>Open Elective -2</b>
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

**Honors Degree in**  
**Electronics and Instrumentation Engineering**  
**COURSE STRUCTURE**

Semester	COURSE CODE	Course Title	Contact Periods per week				C
			L	T	P	Total	
<b>Pool-1</b> III B.Tech. I-Sem (Any 1 Course)	20BTH1001	Advanced Sensors	3	1	-	4	4
	20BTH1002	Wearable sensors and its application	3	1	-	4	4
	20BTH1003	Smart sensors	3	1	-	4	4
<b>Pool-2</b> III B.Tech. I-Sem (Any 1 Course)	20BTH1004	Sensors and Actuators	3	1	-	4	4
	20BTH1005	Wearable technology and IOT	3	1	-	4	4
	20BTH1006	Fractional Calculus and Control	3	1	-	4	4
<b>Pool-3</b> III B.Tech.II-Sem (Any 1 Course and another 1 course through MOOC )	20BTH1007	Digital Control Systems	3	1	-	4	4
	20BTH1008	Multisensor data fusion	3	1	-	4	4
	20BTH1009	Sensors for structural health monitoring	3	1	-	4	4
	20BTHM101	MOOC-1	-	-	-	-	2
<b>Pool-4</b> IV B.Tech.I-Sem (Any 1 Course and another 1 course through MOOC )	20BTH1010	Identification and Adaptive Control	3	1	-	4	4
	20BTH1011	Robust & Optimal Control	3	1	-	4	4
	20BTH1012	Telemetry and Telecontrol	3	1	-	4	4
	20BTHM102	MOOC-2	-	-	-	-	2
<b>Total Credits</b>							<b>20</b>

**Note:** If any student has chosen a course from the above list in their regular curriculum then, he/she is not eligible to opt the same course/s for the Honors degree. It is the responsibility of the student to acquire/complete prerequisite before taking the respective course.

**Minors Degree in**  
**Instrumentation and Control Engineering**  
**COURSE STRUCTURE**

	COURSE CODE	Course Title	Contact Periods per week				C
			L	T	P	Total	
<b>Minor Pool</b>	20BTM1001	Control Systems	3	1	-	4	4
	20BTM1002	Electrical and Electronic Measurements.	3	1	-	4	4
	20BTM1003	MEMS Technology	3	1	-	4	4
	20BTM1004	Industrial Instrumentation	3	1	-	4	4
	20BTM1005	Process Control Instrumentation	3	1	-	4	4
	20BTM1006	Digital Control Systems	3	1	-	4	4
	20BTM1007	Optoelectronics and Laser instrumentation	3	1	-	4	4
	20BTM1008	Transducers in Instrumentation	3	1	-	4	4
	20BTMM101	MOOC-1	-	-	-	-	2
	20BTMM102	MOOC-2	-	-	-	-	2

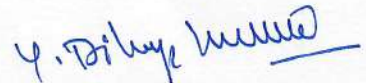
III B.Tech. I-Sem	2 Courses from the above list.	3	1	-	4	4
		3	1	-	4	4
III B.Tech.II-Sem	Any one course from the remaining list.	3	1	-	4	4
	MOOC-1	-	-	-	-	2
IV B.Tech.I-Sem	Another one course from the remaining list.	3	1	-	4	4
	MOOC-2	-	-	-	-	2
<b>Total Credits</b>						<b>20</b>

**Note:** If any student has chosen a course from the above list in their regular curriculum then, he/she is not eligible to opt the same course/s for the Minor degree. It is the responsibility of the student to acquire/complete prerequisite before taking the respective course.

**LIST OF NEW COURSES INTRODUCED**

**Program: B.Tech.- Electronics and Instrumentation Engineering**  
**Regulations : SVEC-20**

S. No.	Course Code	Name of the course
1.	20BT40432	Digital Design Lab
2.	20BT50251	Control Systems Lab
3.	20BT51032	Automotive Instrumentation
4.	20BT71006	SCADA and DCS
5.	20BT50405	VLSI System Design



Dr. Y. Dileep Kumar  
Chairman, BOS in E.I.E