

Agenda for 13th Meeting of Board of Studies for B. Tech. (Electronics and Communication Engineering) on 10-07-2021 at 2:00 PM

1. Action taken report on minutes/resolutions of 12th 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.



Dr.D.Leela Rani
Chairperson, BOS(ECE)

**SREE VIDYANIKETHAN ENGINEERING COLLEGE
(Autonomous)**

Sree Sainath Nagar, A. Rangampet-517 102

Department of Electronics & Communication Engineering

**Board of Studies for B. Tech. in Electronics and
Communication Engineering**

13th Meeting held on 10th July 2021 @ 02:00 PM

Members Present:

S. No.	Name and Address of the member	Member Type
1.	Dr. D. Leela Rani, Professor & Chairperson BoS Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Chairperson
2.	Prof. V. Sumalatha Director, Academic and Planning JNT University Anantapur, ANANTAPURAMU – 515002 Mail ID: dap@jntua.ac.in Mob: +91 9440982344	External
3.	Prof. G. Sasi Bhushana Rao Senior Professor, Dept. of ECE, Andhra University College of Engineering, VISAKHAPATNAM - 530 003 Mail ID: sasigps@gmail.com Mob: +91 9849747131	External
4.	Dr. P. Sreehari Rao Associate Professor of ECE National Institute of Technology, WARANGAL-506004 Mail ID: patri@nitw.ac.in Mob: +91 9441342324	External
5.	Dr. Sreenath Settur Head Transfer of Technology, Centre for Development of Telematics (C-DOT) Electronic City, Phase-I Hosur Road, BENGALURU – 560 100 Mail ID: sns0104@yahoo.co.in Mob: +91 9448988749	External
6.	Mr. P. Veerendra Reddy Senior Staff Design Engineer Ampere computing LLC, Kadubeesanahalli, BENGALURU -560103, Karnataka Mail ID: veeru_mtech@rediffmail.com Mob: +91 7676875449	External
7.	Dr. P. Venkata Ramana, Professor and Head, Dept.of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
8.	Dr. N. Gireesh Professor & Head, Dept.of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal

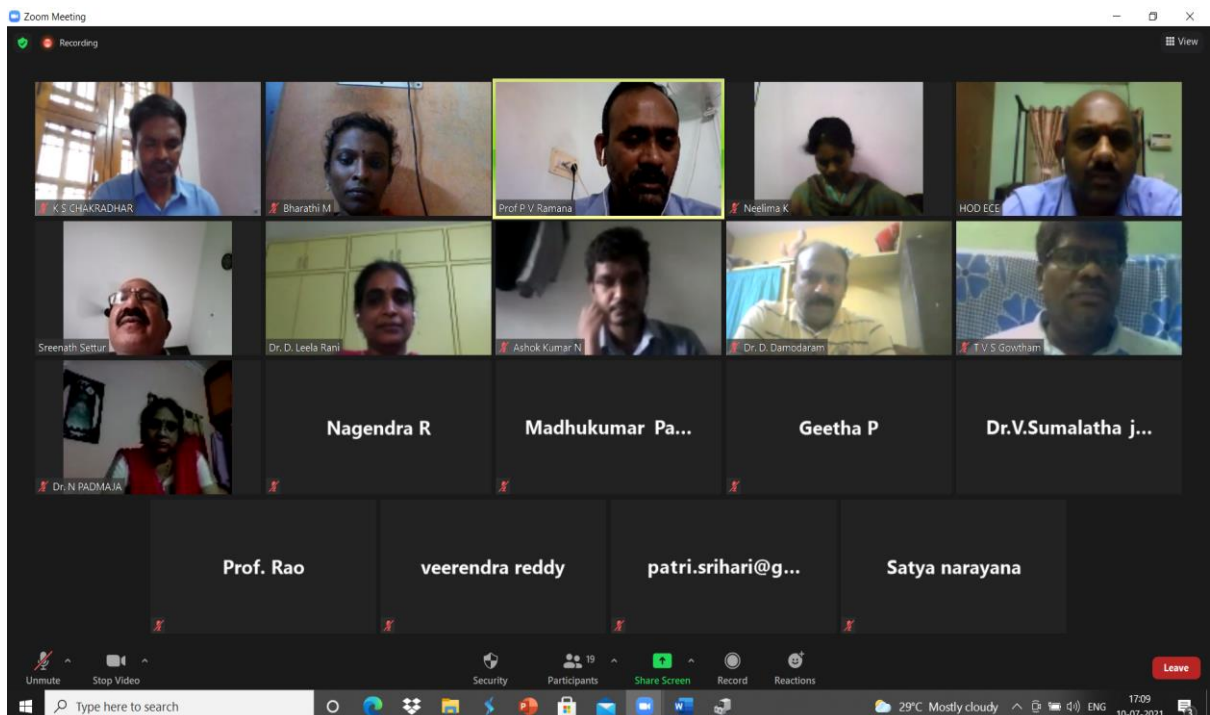
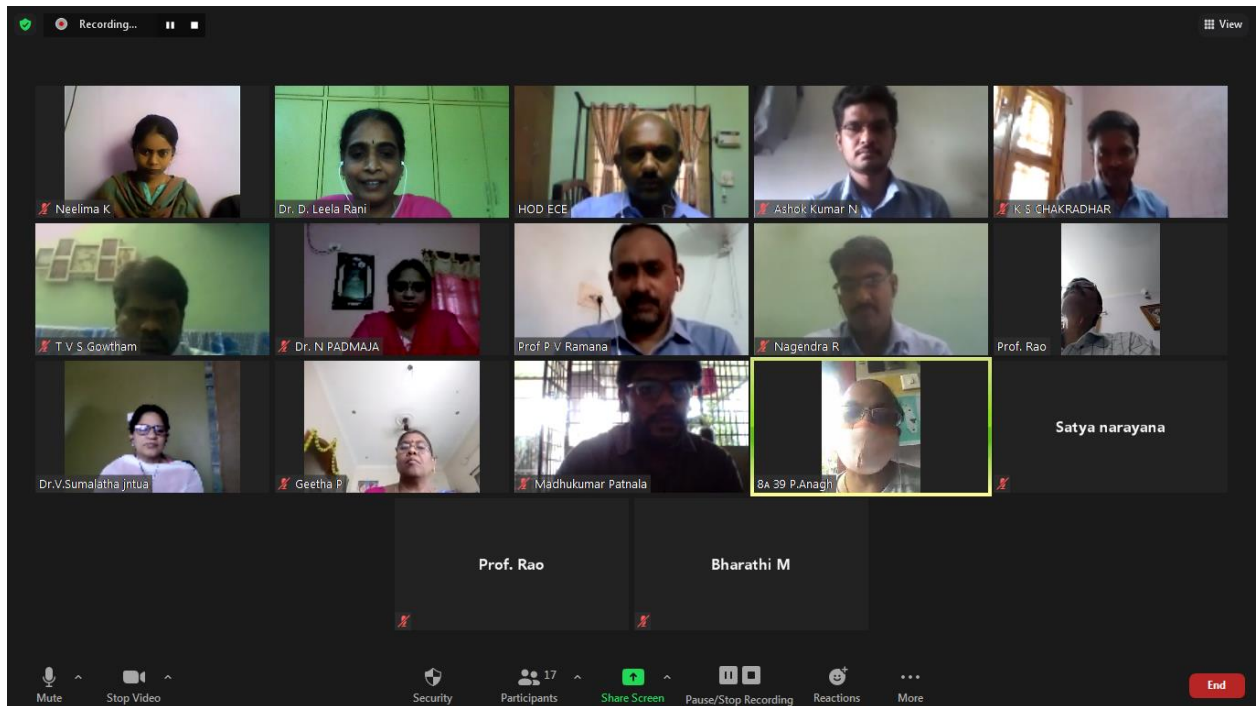
9.	Dr. N. Padmaja, Professor, Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
10.	Mr. K. S. Chakradhar Associate Professor, Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
11.	Dr. P. Geetha Associate Professor, Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
12.	Dr. V. V. Satyanarayana Tallapragada Associate Professor, Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
13.	Dr. N. Ashok Kumar Associate Professor, Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
14.	Dr. TVS Gowtham Prasad Associate Professor, Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
15.	Dr. D. Damodaram Associate Professor, Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
16.	Mr. R. Nagendra , Assistant Professor (SL), Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
17.	Mr. P. Madhu Kumar Assistant Professor (SL), Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
18.	Ms. K. Neelima Assistant Professor, Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal
19.	Ms. M. Bharathi Assistant Professor, Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar – 517102, Tirupati.	Internal

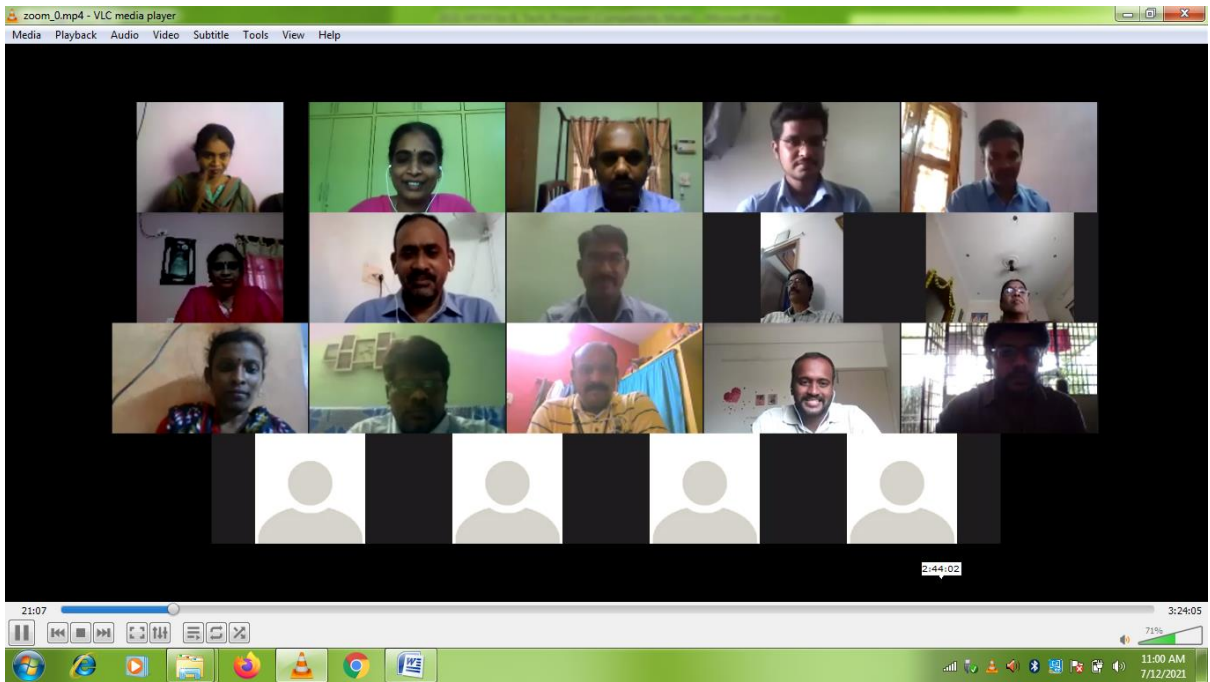
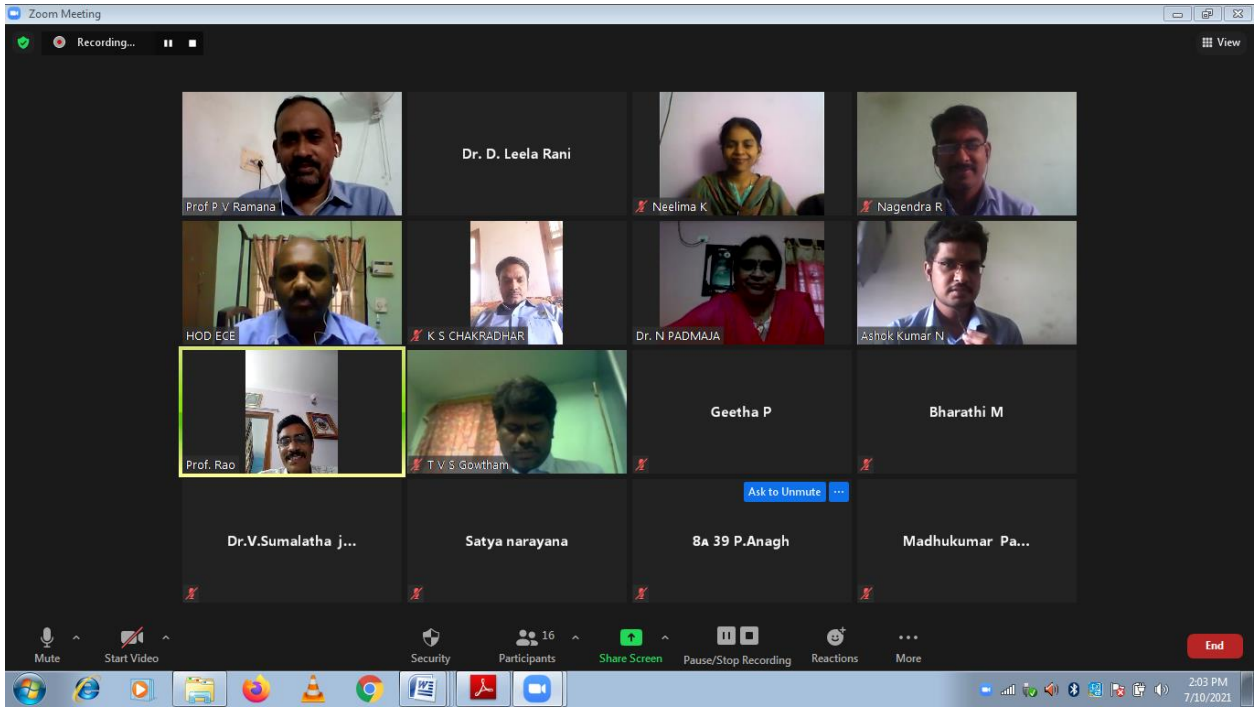
13th Meeting of Board of Studies of Electronics and Communication Engineering (ECE) was conducted **through online video conferencing** using ZOOM platform on 10.07.2021 with the following Login details:

<https://zoom.us/j/5194349208?pwd=Z2VjSWICanNUQlFBRHN6ck1WOGUydz09>
Meeting ID: 519 434 9208
Passcode: 335702

The screenshots taken during the meeting are shown below:

Screen Shots of 13th BoS Meeting, Dept. of ECE (10.07.2021)





Recording You are viewing Dr. D. Leela Rani's screen View Options

bharathi.m

Sl. No.	Subject Code	Course Title	Contact Periods per week				C	Scheme of Examinations		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	19BTBS01	Differential Equations and Multivariable Calculus	3	1	-	4	4	40	60	100
2.	19BTBS02	Biology for Engineers	2	-	-	2	2	40	60	100
3.	19BTBS03	Engineering Physics	3	-	-	3	3	40	60	100
4.	19BTBS04	Basic Civil and Mechanical Engineering	3	-	-	3	3	40	60	100
5.	19BTBS01	Basic Electrical and Electronics Engineering	3	-	-	3	3	40	60	100
6.	19BTBS31	Engineering Physics Lab	-	-	2	2	1	50	50	100
7.	19BTBS31	Basic Electrical and Electronics Engineering Lab	-	-	2	2	1	50	50	100
8.	19BTBS31	Engineering Workshop	-	-	2	2	1	50	50	100
Total:			14	1	6	21	18	350	450	800

Participants: Neelima K, Bharathi M, HOD ECE, Ashok Kumar..., Prof. P. V. Ram..., Dr. D. Leela Rani, K. S. CHAKRAD., T. V. S. Goultam, Sreenath Settur, Dr. N. PADMA., Dr. D. Damod..., Prof. Rao, Nagendra R, Prof. Rao, veerendra reddy, Geetha P, Madhukumar P..., Satya narayana, Dr.V.Sumalatha..., 8a 39 P.Anagh

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Minutes:

1. Action Taken Report on minutes of 12th BOS meeting held on 09th January 2021

The Chairperson BOS appraised the members the action taken on the minutes/resolutions of 12th BOS meeting held on 09th January 2021. After deliberations the members ratified the report and the same is placed at **Annexure – I**.

2. Report on implementation of Autonomy

The Chairperson BOS presented a report on implementation of autonomy pertaining to syllabi & academic regulations for II B.Tech (under SVEC19) and I B.Tech (under SVEC-20) regulations to the members. The Chairperson BOS also briefed about the online classes handled by faculty through zoom platform for the completion of syllabus. The report is accepted after discussions and the same is placed at **Annexure-II**.

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

The chairperson BOS presented the Course Structure approved in 11th BoS meeting held on 12.07.20, draft syllabi with Course Objectives, Course Outcomes for the Courses of III & IV B.Tech including Minor & Honors Degrees (Under SVEC-19) prepared by the department. The Chairperson BOS appraised the members with the procedure followed in articulation of CEOs, COs and mapping of COs with POs & PSOs. The members have suggested improvements in the syllabi and certain changes in the course structures of Minor and Honors Degrees. SVEC-19 Minor and Honors Degrees course structures along with suggestions given by the board are placed at **Annexure-III**.

After deliberations and discussions, the members have ratified the Syllabi with Course Objectives, Course Outcomes, for the Courses of III & IV B.Tech including Minor & Honors Degrees (Under SVEC-19). The syllabi for the courses prepared exclusively for other departments also have been ratified.

It is resolved to authorize the Chairperson BOS to adapt the improvements suggested and submit to the Chairman(Academic council) for further processing.

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).

The chairperson BOS presented the Course Structure prepared by the department based on the revised guidelines given by APSCHE, draft 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).

The members have suggested certain changes in the course structure and improvements in the syllabi. After deliberations and discussions, the members have ratified the Course Structures and the same are placed at **Annexure-IV**. The suggestions given by the board are placed in **Annexure-V**. The syllabi of the courses to be offered exclusively for other departments also have been ratified.

It is resolved to authorize the Chairperson BOS to adapt the improvements suggested and submit to the Chairman(Academic council) for further processing.

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

The Chairperson BOS presented list of courses under SVEC-19 and SVEC-20 regulations in which the content of the syllabus is changed more than 20% with respect to SVEC-16 and SVEC-19 regulations and is placed in **Annexure-VI**. The External members suggested to record such data for improving the curriculum and for accreditation documents.

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

The Chairperson BOS presented list of new courses introduced in SVEC-19 and SVEC-20 regulations to the board and the same is placed in **Annexure-VII**. The board suggested to introduce new courses in line with the latest trends in ECE and industrial needs.

7. Panel of Examiners for Question paper setting

The Chairperson BOS presented the Panel of Examiners for Question paper setting of II B.Tech courses (Under SVEC-19). The Chairperson BOS was suggested to submit the same to the Chairman Academic council for further processing.

8. Substitute courses

The board authorized Head of the Department and BOS chairperson to identify substitute courses for students who rejoin B.Tech program under other regulations and submit to the Chairman(Academic council) for further processing.

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

The Chairperson BOS presented the teaching, learning and evaluation practices followed in the department. The members of BOS have appreciated the good practices followed by the department research, teaching, extension and other academic activities. Dr.N.Padmaja appraised the members about


10. Any other item

Amendments to SVEC-19 B.Tech Academic Regulations

The Chairperson BOS and Dean Academics presented the amendments to SVEC-19 B.Tech Academic Regulations regarding introduction of MOOC, number of credits and courses in Minor and Honors degrees. The members suggested to give clear guidelines to the students for admission in to Minor and Honors degrees.

The amendments are ratified after discussions.

Meeting concluded with thanks to the Chair.



Chairperson, BoS in ECE

Department of Electronics and Communication Engineering

Action Taken Report on minutes/ resolutions of 12th BOS meeting

1. **Course Structure for I B.Tech (I & II Semesters) of Electronics and Communication 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 ECE students, it needn't be offered in first year.
3. RTL concepts can be added in Digital Logic Design course to strengthen it. Further, they suggested moving this course to second year.
4. A course on Basic Electrical Engineering may be considered in first semester followed by Network Analysis in first year II-semester. Proper care must be taken to avoid duplication.
5. DLD may be replaced with a course titled Basic Electrical and Electronics Engineering as in SVEC-19 regulations.
6. Mr. Veerendra, suggested to introduce a course on Python programming in the curriculum to meet industrial needs, for the benefit of students regarding placements.
7. Dr.V.Sumalatha 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

Dr.P.V.Ramana, Dean (Academics) and Dr. N.Gireesh, Professor and HOD appraised the members that a very good number of students were placed during this academic year. The members have appreciated that the student's intake in the department is also very good.

Meeting concluded with thanks to the Chair.

SREE VIDYANIKETHAN ENGINEERING COLLEGE

(Autonomous)

SREE SAINATH NAGAR, TIRUPATI – 517 102, A.P.

Department of Electronics and Communication 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.
3. SVEC 19 Course Structure and Syllabi are also successfully implemented at II B. Tech. level.
4. SVEC 20 Course Structure and Syllabi are also successfully implemented at I B. Tech. level.



Chairperson, BoS in ECE

For II B.Tech-I & II Sem. (SVEC-19) during 2020-21

Sl. No.	Name of the course	Improvements/modifications required if any
1	Electromagnetic Fields and Transmission Lines	<p>1. Continuous charge distribution" and "Forces due to magnetic fields", should be defined precisely in Unit-I.</p> <p>2. <u>Unit-II</u></p> <ul style="list-style-type: none"> o The title, "motional emf" should be included. o The concept of "Relaxation time" should be added to understand behavior of material in a better way. o The concept of "Conductor-Free space" should be added to give complete understanding of boundary conditions. <p>3. The concepts of "Quarter wave transformer" and "Transients on transmission lines" should be added for impedance matching and higher-order learning in Unit-V.</p>
2	Electronic Devices and Circuits	Not required
3	Signals and Systems	Not required
4	Switching Theory and Logic Design	RTL concepts may be included.
5	Electromagnetic Fields and Transmission Lines Lab	Not required
6	Electronic Devices and Circuits Lab	Not required
7	Signals and Systems Lab	Experiments on stochastic random process may be included.
8	Analog Communications	Applications may be added for better understanding of the course.
9	Electronic Circuit Analysis and Design	The syllabus is vast.
10	Linear and Digital IC Applications	Not required
11	Probability and Stochastic Processes	Real-time applications may be included in Unit-V
12	Digital Design Workshop	Not required
13	Electronic Circuit Analysis and Design Lab	Not required
14	Linear and Digital IC Applications Lab	Not required

Annexure-III

Honors in Electronics and Communication Engineering **Course Structure (SVEC-19)**

Semester	Course code	Course title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P			Int. Marks	Ext. Marks	Total Marks
III B.Tech I-Sem. (2 Theory)	19BT50410	ASIC Design	3	-	-		3	40	60	100
	19BT50411	Data communications and networks	3	-	-		3	40	60	100
	19BT50412	Detection and Estimation of Signals	3	-	-		3	40	60	100
	19BT50413	Physical Design Automation	3	-	-		3	40	60	100
III B.Tech II-Sem. (2 Theory)	19BT60411	Advanced Digital Communication Systems	3	-	-		3	40	60	100
	19BT60412	Audio signal processing	3	-	-		3	40	60	100
	19BT60413	Network-on-Chip Design	3	-	-		3	40	60	100
	19BT60414	RF IC Design	3	-	-		3	40	60	100
IV B.Tech I-Sem. (2 Theory)	19BT70410	Advanced Wireless Communications	3	-	-		3	40	60	100
	19BT70411	Optical networks	3	-	-		3	40	60	100
	19BT70412	Pattern Recognition	3	-	-		3	40	60	100
	19BT70413	VLSI Signal Processing	3	-	-		3	40	60	100

Note: If any student has chosen a CORE course from the above list in their curriculum then, he/she is not eligible to opt the same course/s for the Minor/Honor degree.



Chairperson, BoS in ECE

SVEC-19 CURRICULUM
ELECTRONICS AND COMMUNICATION ENGINEERING

Course Structure for Minor Degree in VLSI & Embedded systems
 (Effective from the Academic year 2019-20 onwards)

Semester	Course code	Course title	Contact Periods per week				Scheme of Examination Max. Marks		
			L	T	P	C	Int. Marks	Ext. Marks	Total Marks
III B.Tech. - I-Sem. (2 Theory+ 1 Lab)	19BT30404	Switching Theory and Logic Design	3	-	-	3	40	60	100
	19BT50403	VLSI Design	3	-	-	3	40	60	100
	19BT60402	Microcontrollers	3	-	-	3	40	60	100
	19BT50433	Digital design Lab	-	-	2	1	40	60	100
III B.Tech. - II-Sem. (2 Theory+ 1 Lab)	19BT60404	ARM and AVR Microcontrollers	3	-	-	3	40	60	100
	19BT60409	Testing and Testability	3	-	-	3	40	60	100
	19BT70408	Low Power CMOS VLSI Design	3	-	-	3	40	60	100
	19BT60415	Microprocessors and Microcontrollers	3	-	-	3	40	60	100
	19BT60434	VLSI Lab	-	-	2	1	40	60	100
IV B.Tech. - I-Sem. (1 Theory+ 1 Lab)	19BT70401	Embedded Systems	3	-	-	3	40	60	100
	19BT70409	Real Time Systems	3	-	-	3	40	60	100
	19BT70414	System-on-Chip Design and verification	3	-	-	3	40	60	100
	19BT70432	Embedded Systems Lab	-	-	2	1	40	60	100

Note: If any student has chosen a CORE course from the above list in their curriculum then, he/she is not eligible to opt the same course/s for the Minor degree.



Chairperson, BoS in ECE



SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)

SREE SAINATH NAGAR, TIRUPATI-517 102

Department of Electronics and Communication Engineering

LIST OF COURSES OFFERED EXCLUSIVELY TO OTHER DEPARTMENTS UNDER SVEC-19

S.No.	Course Code	Name of the course	Year & Semester
1.	19BT50441	Microprocessors and Interfacing	III-I
2.	19BT50442	Principles of Communication	III-I
3.	19BT50443	Principles of Image Processing	III-I

**SREE VIDYANIKETHAN ENGINEERING COLLEGE
(Autonomous)**

Sree Sainath Nagar, A. Rangampet-517 102

Department of Electronics & Communication Engineering

**Suggestions given by the External BoS Members for
Improving the Curriculum**

Minor and Honors Degree:

1. The Minor degree to be offered to which department should be clearly mentioned in the guidelines so that, the students from branches like EEE and EIE who have already studied the courses under Minor degree are not eligible to pursue that degree.
2. Pre-requisites should be specified in the guidelines for all the courses under Minor degree. A separate column with pre-requisites can be added in the Minor degree course structure.
3. Honors should be defined for the same degree with specialized courses. It should be related to the same branch. Minor degree to be offered to other departments.
4. Interdisciplinary Minor degree or a generic Minor can be offered by the institution with no matching of courses or by any one department with the courses offered by other departments.
5. Detailed information with respect to guidelines and pre-requisites should be given to the students.
6. Minor in ES can be offered to do justice to other branch students with different structures(suitable) to different branches. Structure need not be common across all branches.
7. The course titled Digital Communication Techniques can be renamed based on content.
8. DWDAM, OTN, Optical transport networks can be included as Introductory topics to have awareness on what is happening in Industries
9. AWC contents are overlapped with CMC. Mentor should properly guide the student in selecting courses where there is no overlap of contents across courses.
10. Lab component in Minor can be included for the benefit of students.

B.Tech SVEC-19

11. DC should start with Gram-schmitt orthogonalization and modeling of signals, matched filter design and then modulations. Simon haykin flow.

12. Difference between ASIC and FPGA can be added in FAA.
13. In Radar Engineering, the topics named LORAN and DECCA in Unit-V can be removed as they are preliminary systems. Instrumentation Landing Systems (ILS) may be added.
14. Design of Matched filter and constellation diagrams using MATLAB can be included in ADC Lab.
15. Standard and latest text books and references can be suggested for better and easy understanding in students point of view.
16. The course titled 'Microwave Theory and Techniques' can be **renamed** as 'Microwave components/devices and networks' or 'Microwave Engineering'.
17. In the course titled Analog IC Design, after modeling concepts, the following concepts may be included in Unit-II: Single stage amplifiers with different loads-diode connection load , current source load, common gate common source loads , source degeneration, design trade-offs, limitations of single stage amplifiers, gain boosting techniques- Cascode amplifier and then current mirrors. Concepts under Unit-III may be Differential amplifier-significance, design and concepts of current mirrors. Unit-IV can be dropped and replaced with two stage operational amplifier compensated circuits-necessity of compensation, miller compensation and fully compensated op-amp with temperature variations. Unit-V can be band gap references.
18. Cellular and Mobile communications can be renamed as mobile cellular communication systems. The syllabus can be updated. Units-I, II, and III can be considered. 2G and 3G systems can be combined in to one unit. Unit-V contents may be 4G and beyond.
19. In the course titled Information Theory and Coding Techniques, contents in Unit I & II are repeated in DC. Redundancy in the syllabus should be removed and can be renamed as Error control coding or coding theory. The topics like STBC polar, LDPC codes and other latest codes can be included. Standard and Good books such as K. Deergha rao, Channel coding Techniques for Wireless communications, 2nd Edition, springer publications, 2015, can be suggested
20. Unit-I title in Real Time Systems can be renamed as Modelling of RTS.
21. AME Lab can be two separate labs. Name of the experiment should be clearly mentioned with Aim reflected such as Prove reciprocity theorem, Obtain radiation chs. of monopole, determine S-parameters.
22. Virtusa tool can be proposed to meet industrial needs.



Chairperson, BoS in ECE

SVEC-20 CURRICULUM

Course Structure for B.Tech Program (Effective from the Academic year 2020-21 onwards)

ELECTRONICS AND COMMUNICATION ENGINEERING

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.	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.	20BT30401	Electromagnetic Fields and Transmission Lines	3	-	-	3	3	30	70	100
3.	20BT30402	Electronic Devices and Circuits	3	-	-	3	3	30	70	100
4.	20BT30403	Signals and Systems	3	-	-	3	3	30	70	100
5.	20BT30404	Switching Theory and Logic Design	3	-	-	3	3	30	70	100
6.	20BT30431	Electromagnetic Fields and Transmission Lines Lab	-	-	3	3	1.5	30	70	100
7.	20BT30432	Electronic Devices and Circuits Lab	-	-	3	3	1.5	30	70	100
8.	20BT30433	Signals and Systems 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.	20BT40401	Analog Communications	3	-	-	3	3	30	70	100
2.	20BT40402	Electronic Circuit Analysis and Design	3	-	-	3	3	30	70	100
3.	20BT40403	Linear and Digital IC Applications	3	-	-	3	3	30	70	100
4.	20BT40404	Probability and Stochastic Processes	3	-	-	3	3	30	70	100
5.	Open Elective-1						3	30	70	100
6.	20BT40431	Analog Communications Lab	-	-	3	3	1.5	30	70	100
7.	20BT40432	Digital Design Lab	-	-	3	3	1.5	30	70	100
8.	20BT40433	Electronic Circuit Analysis and Design Lab	-	-	3	3	1.5	30	70	100
9.	20BT40405	Microcontroller and Interfacing	2	-	-	2	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.	20BT50401	Digital Communications	3	-	-	3	3	30	70	100
4.	Open Elective-2						3	30	70	100
5.	Professional Elective- 1		3	-	-	3	3	30	70	100
	20BT51041	Electronic Measurements and Instrumentation								
	20BT50402	Fiber Optic Communications								
	20BT50403	FPGA Architectures and Applications								
	20BT50404	Radar Engineering								
6.	20BT50431	Digital Communications Lab	-	-	3	3	1.5	30	70	100
7.	20BT50432	Linear and Digital IC Applications Lab	-	-	3	3	1.5	30	70	100
8.	20BT50405	VLSI System Design	2	-	-	-	2	30	70	100
9.	20BT50433	Summer Internship-1	-	-	-	-	1.5	-	100	100
Total							21.5	240	660	900
10.	20BT503AC	Foundations of Entrepreneurship	2	-	-	2	-	-	-	-
11.	20BT50406	Green Technologies	Open Elective-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 Behaviour	3	-	-	3	3	30	70	100
2.	20BT60401	Antennas and Propagation	3	-	-	3	3	30	70	100
3.	20BT60402	Digital Signal Processing	3	-	-	3	3	30	70	100
4.	Professional Elective-2		3	-	-	3	3	30	70	100
	20BT71001	Biomedical Instrumentation								
	20BT60403	ARM and AVR Microcontrollers								
	20BT60404	Digital IC Design								
	20BT60405	Satellite Communications								
5.	Professional Elective-3		3	-	-	3	3	30	70	100
	20BT60406	Image Processing								
	20BT60407	Nanostructures and Nanotechnology								
	20BT60408	Testing and Testability								
	20BT60409	Wireless Sensor Networks								
6.	Inter disciplinary Elective-1		3	-	-	3	3	30	70	100
	20BT40501	Database Management Systems								
	20BT50501	Computer Networks								
	20BT21501	Object Oriented Programming Through Java								
	20BT60410	Microelectromechanical Systems								
7.	20BT60431	Digital Signal Processing Lab	-	-	3	3	1.5	30	70	100
8.	20BT60432	Microcontrollers Lab	-	-	3	3	1.5	30	70	100
9.	20BT60411	PIC Microcontrollers	2	-	-	-	2	30	70	100
Total							23	270	630	900
10.	20BT5MC01	Professional Ethics	2	-	-	2	-	30	-	30

**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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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.	20BT70401	Embedded Systems	3	-	-	3	3	30	70	100
2.	20BT70402	Microwave Engineering	3	-	-	3	3	30	70	100
3.	Professional Elective-4		3	-	-	3	3	30	70	100
	20BT70403	Advanced Digital Signal Processing								
	20BT70404	Analog IC Design								
	20BT70405	Cellular and Mobile communications								
	20BT70406	Speech Processing								
4.	Professional Elective-5		3	-	-	3	3	30	70	100
	20BT70407	Adaptive Signal Processing								
	20BT70408	Error Control Coding								
	20BT70409	Low Power CMOS VLSI Design								
	20BT70410	Real Time Systems								
5.	Inter disciplinary Elective-2		3	-	-	3	3	30	70	100
	20BT60501	Machine Learning								
	20BT60201	Power Electronics								
	20BT60504	Cryptography and Network Security								
	20BT71041	PLC and SCADA								
6.	20BT70431	Antennas and Microwave Engineering Lab	-	-	3	3	1.5	30	70	100
7.	20BT70432	Embedded Systems Lab	-	-	3	3	1.5	30	70	100
8.	20BT70433	Programming using LabVIEW	-	1	2	3	2	30	70	100
9.	20BT70434	Summer Internship-2	-	-	-	-	1.5	-	100	100
Total							21.5	240	660	900
10.	20BT704AC	Internet of Things Applications	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.	20BT80431	Project Work	-	-	-	-	12	100	100	200
2.	20BT80432	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



Chairperson, BoS in ECE

Minor Degree in Electronics and Communication Engineering

Course Structure (SVCE-20)

	COURSE CODE	Course Title	Contact Periods per week				C
			L	T	P	Total	
Minor Pool	20BTM0401	Analog Communications	3	1	-	4	4
	20BTM0402	Cellular and Mobile communications	3	1	-	4	4
	20BTM0403	Digital Communications	3	1	-	4	4
	20BTM0404	Digital Signal Processing	3	1	-	4	4
	20BTM0405	Electronic Circuit Analysis and Design	3	1	-	4	4
	20BTM0406	Electronic Devices and Circuits	3	1	-	4	4
	20BTM0407	Embedded Systems	3	1	-	4	4
	20BTM0408	Linear and Digital IC Applications	3	1	-	4	4
	20BTM0409	Microcontrollers	3	1	-	4	4
	20BTM0410	Signals and Systems	3	1	-	4	4
	20BTM0411	Switching Theory and Logic Design	3	1	-	4	4
	20BTM0412	VLSI Design	3	1	-	4	4
	20BTMM041	MOOC-1	-	-	-	-	2
	20BTMM042	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	-	-	-	-	2
IV B.Tech.I-Sem	Another one course from the remaining list.	3	1	-	4	4
	MOOC	-	-	-	-	2
Total Credits						20

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.

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Chairperson, BoS in ECE

Minor Degree in VLSI & Embedded systems

Course Structure (SVCC-20)

	COURSE CODE	Course Title	Contact Periods per week				C
			L	T	P	Total	
Minor Pool	20BTM0407	Embedded Systems	3	1	-	4	4
	20BTM0409	Microcontrollers	3	1	-	4	4
	20BTM0411	Switching Theory and Logic Design	3	1	-	4	4
	20BTM0412	VLSI Design	3	1	-	4	4
	20BTM0413	ARM and AVR Microcontrollers	3	1	-	4	4
	20BTM0414	Low Power CMOS VLSI Design	3	1	-	4	4
	20BTM0415	Real Time Systems	3	1	-	4	4
	20BTM0416	System-on-Chip Design and Verification	3	1	-	4	4
	20BTM0417	Testing and Testability	3	1	-	4	4
	20BTMM041	MOOC-1	-	-	-	-	2
	20BTMM042	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	-	-	-	-	2
IV B.Tech.I-Sem	Another one course from the remaining list.	3	1	-	4	4
	MOOC	-	-	-	-	2
Total Credits						20

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.



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Honors Degree in Electronics and Communication Engineering Course Structure (SVEC-20)

Semester	COURSE CODE	Course Title	Contact Periods per week				C
			L	T	P	Total	
Pool-1 III B.Tech. I-Sem (Any 1 Course)	20BTH0401	ASIC Design	3	1	-	4	4
	20BTH0402	Data communications and networks	3	1	-	4	4
	20BTH0403	Detection and Estimation of Signals	3	1	-	4	4
Pool-2 III B.Tech. I-Sem (Any 1 Course)	20BTH0404	Advanced Digital Communication Systems	3	1	-	4	4
	20BTH0405	Physical Design Automation	3	1	-	4	4
	20BTH0406	RF IC Design	3	1	-	4	4
Pool-3 III B.Tech.II-Sem (Any 1 Course and another 1 course through MOOC)	20BTH0407	Audio signal processing	3	1	-	4	4
	20BTH0408	Network-on-Chip Design	3	1	-	4	4
	20BTH0409	Optical networks	3	1	-	4	4
	20BTHM041	MOOC-1	-	-	-	-	2
Pool-4 IV B.Tech.I-Sem (Any 1 Course and another 1 course through MOOC)	20BTH0410	Advanced Wireless Communications	3	1	-	4	4
	20BTH0411	Pattern Recognition	3	1	-	4	4
	20BTH0412	VLSI Signal Processing	3	1	-	4	4
	20BTHM042	MOOC-2	-	-	-	-	2
Total Credits							20

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.



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SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)

SREE SAINATH NAGAR, TIRUPATI-517 102

Department of Electronics and Communication Engineering

LIST OF COURSES OFFERED EXCLUSIVELY TO OTHER DEPARTMENTS UNDER SVEC-20

S.No.	Course Code	Name of the course	Year & Semester
1.	20BT50441	Principles of Communication	III-I
2.	20BT50442	Principles of Image Processing	III-I
3.	20BT60441	Microprocessors and Interfacing	III-II
4.	20BT60442	VLSI Design	III-II
5.	20BT60443	Microcontrollers	III-II



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Sree Sainath Nagar, A. Rangampet-517 102

Department of Electronics & Communication Engineering

**Suggestions given by the External BoS Members for
Improving the Curriculum**

B.Tech SVEC-20

1. If no mandate requirement regarding ES category – Electronics Workshop can be replaced with Digital Logic Design Lab
2. Lab title should be content based not tool based and should be named accordingly. Open ended softwares can be used.
3. EDA Tool design, Hardware description languages, VLSI System design, Intelligent IC system design with low power system design aspects and IOT aspects, AI in system design can be considered as skill-oriented courses
4. Freedom should be given freedom in completing a course under MOOC. It may be completed in any semester.
5. The course titled Digital Communication Techniques can be renamed based on content.
6. DWDAM, OTN, Optical transport networks can be included as Introductory topics to have awareness on what is happening in Industries
7. AWC contents are overlapped with CMC. Mentor should properly guide the student in selecting courses where there is no overlap of contents across courses.
8. Lab component in Minor can be included for the benefit of students.

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Sree Sainath Nagar, Tirupati

Department of Electronics and Communication Engineering

**List of Courses where syllabus content has been changed
(20% and more)****Program: B.Tech.- Electronics and Communication Engineering****Regulations : SVEC-19**

S. No.	Course Code	Name of the course	% change
1.	19BT10201	Basic Electrical and Electronics Engineering	100
2.	19BT10231	Basic Electrical and Electronics Engineering Lab	100
3.	19BT10341	Basic Civil and Mechanical Engineering	100
4.	19BT10501	Programming for Problem Solving	100
5.	19BT10531	Programming for Problem Solving Lab	100
6.	19BT1AC01	Spoken English	100
7.	19BT1BS02	Biology for Engineers	100
8.	19BT30402	Electronic Devices and Circuits	30
9.	19BT30432	Electronic Devices and Circuits Lab	50
10.	19BT30431	Electromagnetic Fields and Transmission Lines Lab	100
11.	19BT315AC	Design Thinking	100
12.	19BT40402	Electronic Circuit Analysis and Design	20
13.	19BT40432	Electronic Circuit Analysis and Design Lab	50
14.	19BT40433	Linear and Digital IC Applications Lab	70
15.	19BT40441	Analog Electronics	20
16.	19BT40403	Linear and Digital IC Applications	100
17.	19BT40431	Digital Design Workshop	100

18.	19BT4BS01	Material Science	100
19.	19BT4HS05	Gender & Environment	100
20.	19BT4HS09	Life Skills	100
21.	19BT4HS11	Professional Ethics	100
22.	19BT4HS12	Women Empowerment	100
23.	19BT40107	Sustainable Engineering	100
24.	19BT50405	Fiber Optic Communications	100
25.	19BT50406	FPGA Architectures and Applications	100
26.	19BT50431	Analog and Digital Communications Lab	100
27.	19BT61531	Internet of Things Lab	100
28.	19BT50432	Socially Relevant Project-1	100
29.	19BT503AC	Foundations of Entrepreneurship	100
30.	19BT60401	Antennas and Propagation	20
31.	19BT60402	Microcontrollers	100
32.	19BT60404	ARM and AVR Microcontrollers	100
33.	19BT60405	Digital IC Design	100
34.	19BT60408	Nanostructures and Nanotechnology	100
35.	19BT60409	Testing and Testability	100
36.	19BT60410	Wireless Sensor Networks	30
37.	19BT50501	Machine Learning	100
38.	19BT60201	Power Electronics	100
39.	19BT71002	PLC and SCADA	100
40.	19BT60433	Socially Relevant Project-2	100
41.	19BT5MC01	Universal Human Values	100
42.	19BT60432	Microcontrollers Lab	100
43.	19BT70402	Microwave Engineering	20
44.	19BT70404	Cellular and Mobile communications	60
45.	19BT70405	Speech Processing	30
46.	19BT71001	Biomedical Instrumentation	100
47.	19BT70406	Adaptive Signal Processing	100
48.	19BT70407	Error Control Coding	100
49.	19BT70409	Real Time Systems	100
50.	19BT70433	Internship	100
51.	19BT704AC	Principles of Operating Systems	100

Rajalabi

SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)
Sree Sainath Nagar, Tirupati
Department of Electronics and Communication Engineering

LIST OF NEW COURSES INTRODUCED

Program: B.Tech.- Electronics and Communication Engineering

Regulations : SVEC-19

S. No.	Course Code	Name of the course
1.	19BT10201	Basic Electrical and Electronics Engineering
2.	19BT10231	Basic Electrical and Electronics Engineering Lab
3.	19BT10341	Basic Civil and Mechanical Engineering
4.	19BT10501	Programming for Problem Solving
5.	19BT10531	Programming for Problem Solving Lab
6.	19BT1AC01	Spoken English
7.	19BT1BS02	Biology for Engineers
8.	19BT30431	Electromagnetic Fields and Transmission Lines Lab
9.	19BT315AC	Design Thinking
10.	19BT40403	Linear and Digital IC Applications
11.	19BT40431	Digital Design Workshop
12.	19BT4BS01	Material Science
13.	19BT4HS05	Gender & Environment
14.	19BT4HS09	Life Skills
15.	19BT4HS11	Professional Ethics
16.	19BT4HS12	Women Empowerment
17.	19BT40107	Sustainable Engineering
18.	19BT50405	Fiber Optic Communications
19.	19BT50406	FPGA Architectures and Applications

20.	19BT50431	Analog and Digital Communications Lab
21.	19BT61531	Internet of Things Lab
22.	19BT50432	Socially Relevant Project-1
23.	19BT503AC	Foundations of Entrepreneurship
24.	19BT60402	Microcontrollers
25.	19BT60404	ARM and AVR Microcontrollers
26.	19BT60405	Digital IC Design
27.	19BT60408	Nanostructures and Nanotechnology
28.	19BT60409	Testing and Testability
29.	19BT50501	Machine Learning
30.	19BT60201	Power Electronics
31.	19BT71002	PLC and SCADA
32.	19BT60433	Socially Relevant Project-2
33.	19BT5MC01	Universal Human Values
34.	19BT60432	Microcontrollers Lab
35.	19BT71001	Biomedical Instrumentation
36.	19BT70406	Adaptive Signal Processing
37.	19BT70407	Error Control Coding
38.	19BT70409	Real Time Systems
39.	19BT70433	Internship
40.	19BT704AC	Principles of Operating Systems



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SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)
Sree Sainath Nagar, Tirupati
Department of Electronics and Communication Engineering

LIST OF NEW COURSES INTRODUCED

Program: Honors in Electronics and Communication Engineering

Regulations : SVEC-19

S. No.	Course Code	Name of the course
1.	19BT50410	ASIC Design
2.	19BT50411	Data communications and networks
3.	19BT50412	Detection and Estimation of Signals
4.	19BT50413	Physical Design Automation
5.	19BT60411	Advanced Digital Communication Systems
6.	19BT60412	Audio signal processing
7.	19BT60413	Network-on-Chip Design
8.	19BT60414	RF IC Design
9.	19BT70410	Advanced Wireless Communications
10.	19BT70411	Optical networks
11.	19BT70412	Pattern Recognition
12.	19BT70413	VLSI Signal Processing

Program: Minor Degree in VLSI & Embedded systems

Regulations : SVEC-19

S. No.	Course Code	Name of the course
1.	19BT50433	Digital design Lab
2.	19BT60434	VLSI Lab
3.	19BT70414	System-on-Chip Design and Verification


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SREE VIDYANIKETHAN ENGINEERING COLLEGE

(AUTONOMOUS)

Sree Sainath Nagar, Tirupati

Department of Electronics and Communication Engineering

LIST OF NEW COURSES INTRODUCED

Program: B.Tech.- Electronics and Communication Engineering

Regulations : SVEC-20

S. No.	Course Code	Name of the course
1.	20BT40432	Digital Design Lab
2.	20BT40405	Microcontroller and Interfacing
3.	20BT50405	VLSI System Design
4.	20BT60411	PIC Microcontrollers
5.	20BT70433	Programming using LabVIEW
6.	20BT704AC	Internet of Things Applications



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