

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 |

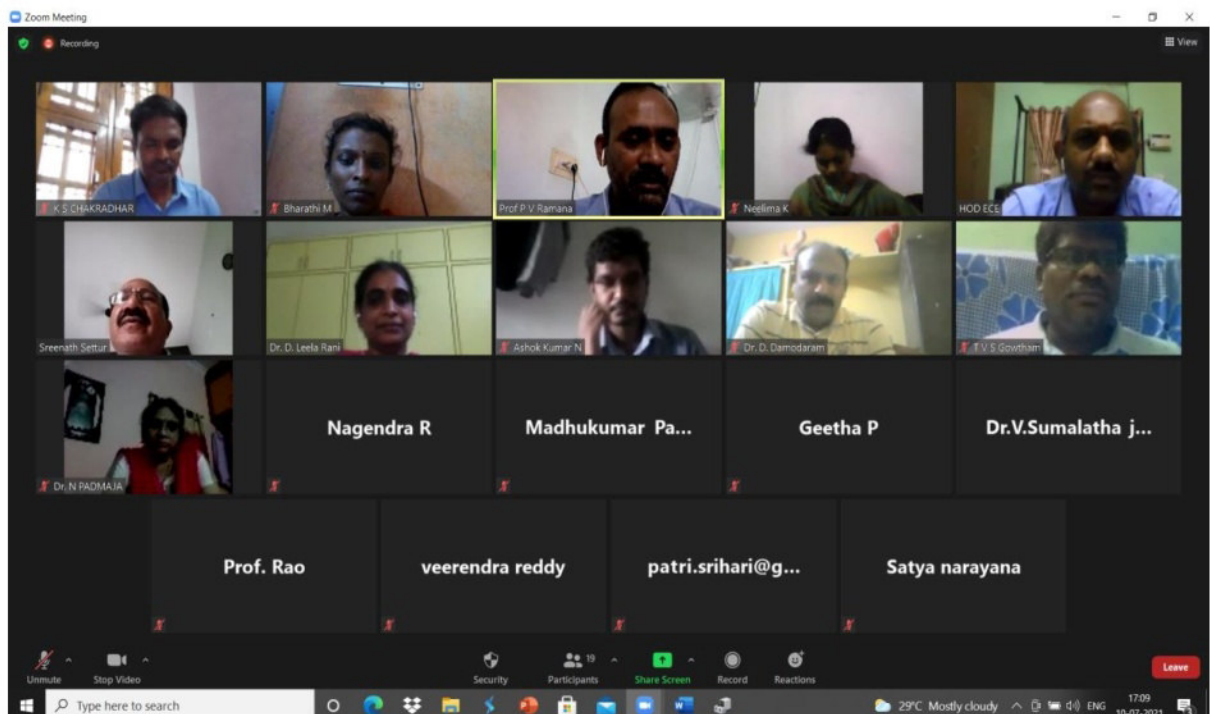
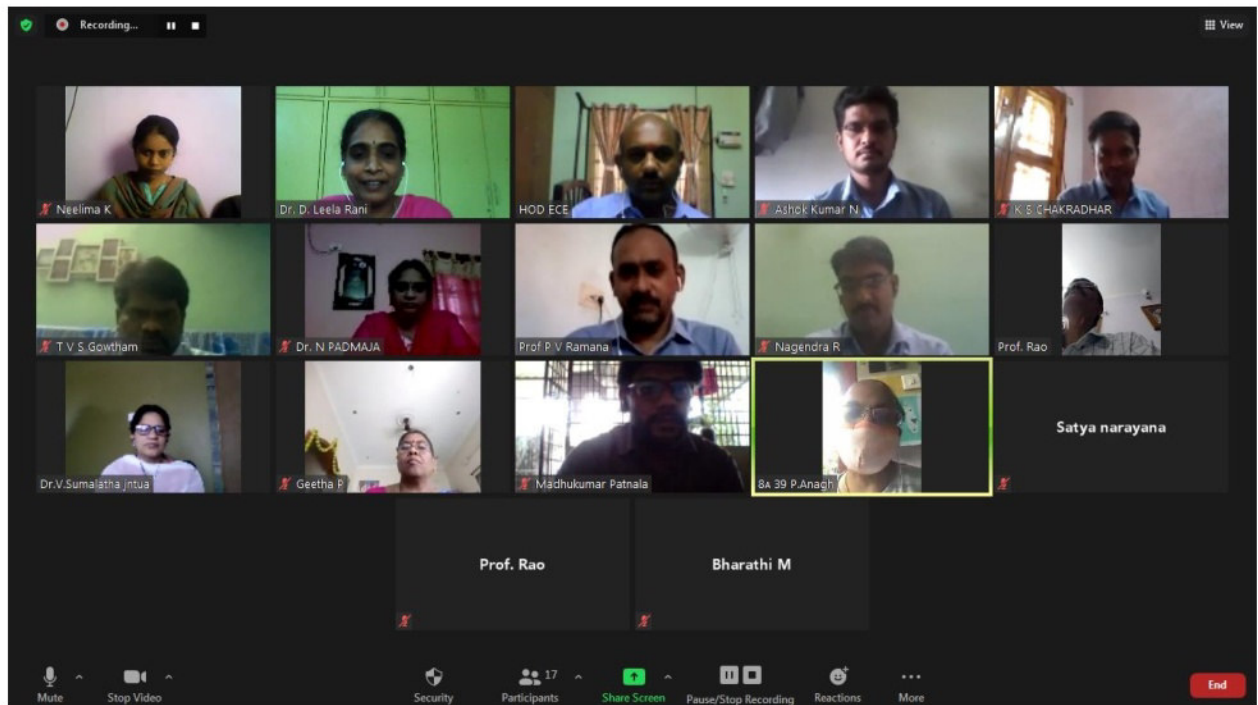
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|-----|--|----------|
| 9. | Dr. N. Padmaja, Professor, Dept. of ECE. Sree Vidyanikethan Engineering College, Sree Sainath Nagar - 517102, Tirupati. | Internal |
| 10. | Mr. K. S. Chakradhar Associate Professor, Dept. of ECE. Sree Vidyanikethan Engineering 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 |

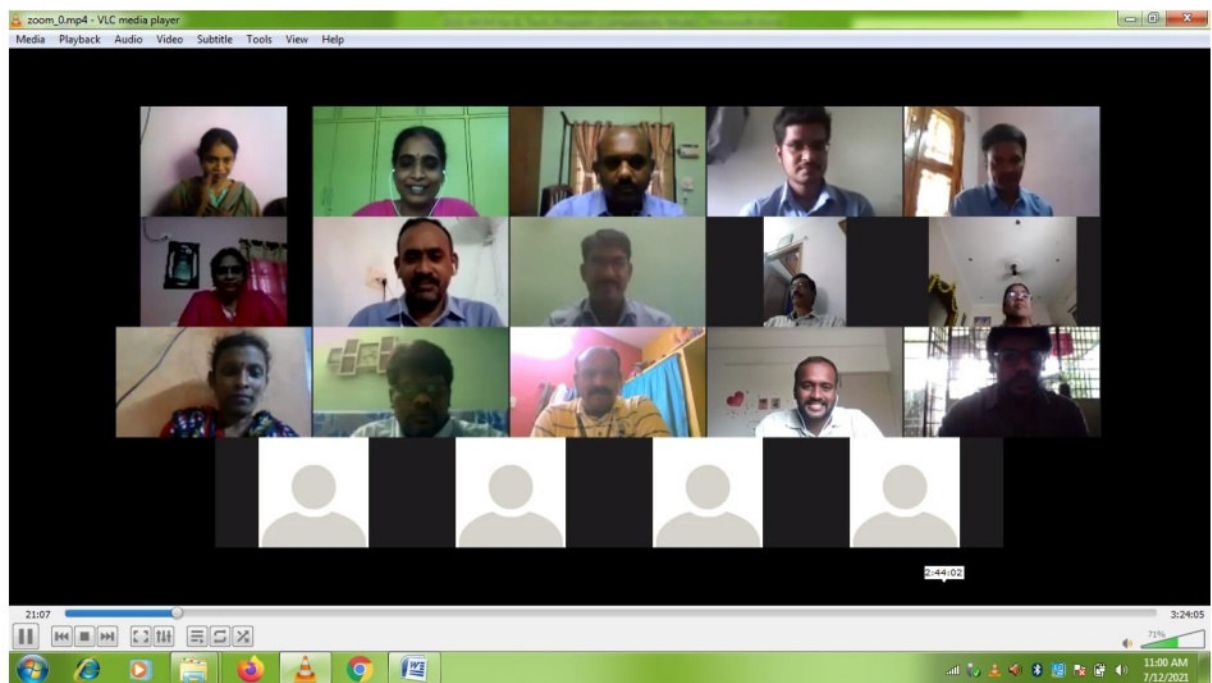
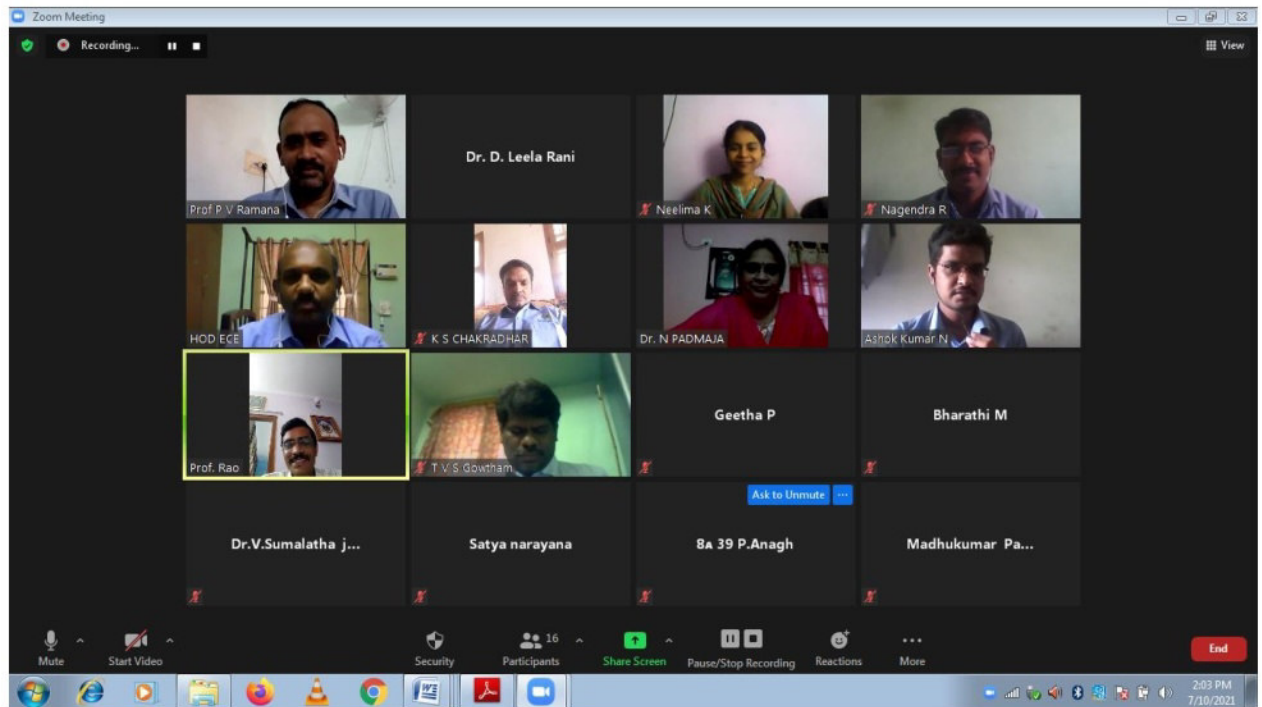
13th Meeting of Board of Studies of Electronics and Communication Engineering (ECE) was conducted **through online video conferencing** using ZOOM platform on 10.07.2021 with the following Login details:

<https://zoom.us/j/5194349208?pwd=Z2VjSWlCanNUQlFBRHN6ck1WOGUydz09>
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. | 19BT1B001 | Differential Equations and Multivariable Calculus... | 3 | 1 | - | 4 | 4 | 40 | 60 | 100 |
| 2. | 19BT1B002 | Biology for Engineers | 2 | - | - | 2 | 2 | 40 | 60 | 100 |
| 3. | 19BT1B003 | Engineering Physics | 3 | - | - | 3 | 3 | 40 | 60 | 100 |
| 4. | 19BT1B034 | Basic Civil and Mechanical Engineering | 3 | - | - | 3 | 3 | 40 | 60 | 100 |
| 5. | 19BT1B001 | Basic Electrical and Electronics Engineering | 3 | - | - | 3 | 3 | 40 | 60 | 100 |
| 6. | 19BT1B031 | Engineering Physics Lab | - | - | 2 | 2 | 1 | 50 | 50 | 100 |
| 7. | 19BT1B031 | 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 |

Participants: Neelima K, Bharathi M, HOD ECE, Ashok Kumar..., Prof. P.V. Ram..., Dr. D. Leela Rani, K.S. CHAKRAD..., T.V.S. Gopikrish..., 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

Mute Stop Video Security Participants 20 Share Screen Record Reactions Leave

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 | | | | Scheme of Examination Max. Marks | | |
|-------------------------------|-------------|--|--------------------------|---|---|---|-------------------------------------|------------|-------------|
| | | | L | T | P | C | 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 | | | C | Scheme of Examination Max. Marks | | |
|--|-------------|--|--------------------------|---|---|---|----------------------------------|------------|-------------|
| | | | L | T | P | | 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 |



Chairperson, BoS in ECE

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.



Chairperson, BoS in ECE

Minor Degree in VLSI & Embedded systems

Course Structure (SVEC-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.



Chairperson, BoS in ECE

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.



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-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 |



**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**

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.

SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)

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 |

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Annexure-VII**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 |



Chairperson, BoS in ECE

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

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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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