

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
**BELAGAVI**



**Scheme of Teaching and Examinations**  
**M.Tech., in Electronics and Communication Engineering**  
**(Specialization in Electronics and Communication Engineering)**  
Choice Based Credit System (CBCS) and Outcome Based Education (OBE)

**Specialization in –(ECE)**

**II SEMESTER**

| Sl. No       | Course   | Course Code | Course Title                                      | Teaching Hours /Week |                    |                                              | Examination       |            |            |             | Credits   |
|--------------|----------|-------------|---------------------------------------------------|----------------------|--------------------|----------------------------------------------|-------------------|------------|------------|-------------|-----------|
|              |          |             |                                                   | Theory               | Practical/ Seminar | Tutorial/<br>Skill Development<br>Activities | Duration in hours | CIE Marks  | SEE Marks  | Total Marks |           |
|              |          |             |                                                   | L                    | P                  | T/SDA                                        |                   |            |            |             |           |
| 1            | IPCC     | MECE201     | Antenna Theory and Design                         | 03                   | 02                 | 00                                           | 03                | 50         | 50         | 100         | 4         |
| 2            | PCC      | MECE202     | Embedded System Design                            | 02                   | 00                 | 02                                           | 03                | 50         | 50         | 100         | 3         |
| 3            | PCC      | MECE203     | Advanced Communication System                     | 02                   | 00                 | 02                                           | 03                | 50         | 50         | 100         | 3         |
| 4            | PCC (PB) | MECE204     | Internet of Things                                | 02                   | 00                 | 02                                           | 03                | 50         | 50         | 100         | 3         |
| 5            | PEC      | MECE215x    | Professional Elective I                           | 02                   | 00                 | 02                                           | 03                | 50         | 50         | 100         | 3         |
| 6            | PEC      | MECE216x    | Professional Elective II                          | 02                   | 00                 | 02                                           | 03                | 50         | 50         | 100         | 3         |
| 7            | PCCL     | MECEL207    | Advanced Communication Lab                        | 00                   | 04                 | 00                                           | 03                | 50         | 50         | 100         | 2         |
| 8            | AEC/SEC  | MECE258x    | Ability/Skill Enhancement Course (Offline/Online) | 00                   | 02                 | ---                                          | 02                | 50         | 50         | 100         | 1         |
|              |          |             |                                                   | 01                   | 00                 | ----                                         | 01                |            |            |             |           |
| <b>TOTAL</b> |          |             |                                                   |                      |                    |                                              |                   | <b>400</b> | <b>400</b> | <b>800</b>  | <b>22</b> |

| Professional Elective I |                                      | Professional Elective II |                                    |  |  |
|-------------------------|--------------------------------------|--------------------------|------------------------------------|--|--|
| Course Code             | Course Title                         | Course Code              | Course Title                       |  |  |
| MECE215A                | Nano Electronics                     | MECE216A                 | Error Control Coding               |  |  |
| MECE215B                | Cryptography & Network Security      | MECE216B                 | Micro Electro Mechanical Systems   |  |  |
| MECE215C                | Optical Communication and Networking | MECE216C                 | Automotive Electronics             |  |  |
| MECE215D                | RF and Microwave Circuit Design      | MECE216D                 | Simulation, Modelling and Analysis |  |  |

Note: **PCC**: Professional core, **IPCC**-Integrated Professional Core Courses, **PCC(PB)**: Professional Core Courses (Project Based), **PCCL**-Professional Core Course lab, **PEC**- Professional Elective Courses, **MDC**- Multi-Disciplinary Courses

**L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities** (Hours are for Interaction between faculty and students)

**L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities** (Hours are for Interaction between faculty and students) **PBLC**: Project Based Learning Course,

Note: **xxx** means specialization code for example **MDE**- DesignEngineering, **LDN**- Digital Communication and Networking, **SCE**- Computer Engineering, **CCT**- Construction Technology, **AUD**- Urban Design, **MBA**- Master of Business Administration, **MCA**-Master of Computer Application, etc.

| Ability / Skill Enhancement Courses |                                               |    |       |    |  |
|-------------------------------------|-----------------------------------------------|----|-------|----|--|
| Course Code                         | Course title                                  | L  | T/SDA | P  |  |
| MECE258A                            | Advanced Digital Signal Processing Laboratory | 00 | ..... | 02 |  |
| MECE258B                            | Internet of Things Laboratory                 | 00 | ..... | 02 |  |
| MECE258C                            | Biomedical Signal Processing                  | 01 | ..... | 00 |  |
| MECE258D                            | Array Signal Processing                       | 01 | ..... | 00 |  |

**Ability Enhancement Courses (AEC)**: These courses are designed to help students enhance their skills in communication, language, and personality development. They also promote a deeper understanding of subjects like social sciences and ethics, culture and human behavior, human rights, and the law. **Skill Enhancement Course (SEC)**: Skill Enhancement Course means a course designed to provide value-based or skill-based knowledge and should contain both theory and lab/hands-on/training/fieldwork. The main purpose of these courses is to provide students with life skills in the hands-on mode to increase their employability.

**If AEC/SEC courses are ONLINE (MOOCs) courses** suggested by the concerned board of studies. These courses will be made available on **www.online.vtu.ac.in**, however, online courses are not considered for vertical progression, but qualifying in online courses is mandatory for the award of the degree.

**For the students who are willing to take up a two-semester duration Industry/Research Internship  
Leading to Project work /start-up**

**III SEMESTER (A)**

| Sl. No       | Course  | Course Code    | Course Title                                                              | Teaching Hours /Week                                                                |                                           |                                              | Examination       |           |            | Credits   |             |
|--------------|---------|----------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------|-------------------|-----------|------------|-----------|-------------|
|              |         |                |                                                                           | Theory                                                                              | Practical/<br>Mini-Project/<br>Internship | Tutorial/<br>Skill Development<br>Activities | Duration in hours | CIE Marks | SEE Marks  |           | Total Marks |
|              |         |                |                                                                           | L                                                                                   | P                                         | SDA                                          |                   |           |            |           |             |
| 1            | PEC/MDC | Mxxx311x       | (Online Courses) 12 weeks duration                                        |                                                                                     |                                           |                                              |                   |           | 100        | 3         |             |
| 2            |         | Mxxx312x       | (Online Courses) 12 weeks duration                                        |                                                                                     |                                           |                                              |                   |           | 100        | 3         |             |
|              |         | Mxxx313x       | (Online Courses) 12 weeks duration                                        |                                                                                     |                                           |                                              |                   |           | 100        | 3         |             |
| 3            | INT     | <b>MINT384</b> | Research Internship /Industry-Internship leading to project work/ Startup | Two-semester duration, SEE in the IV semester which leads to project work /start-up |                                           |                                              | 03                | 100       | ---        | 100       | 3           |
| <b>TOTAL</b> |         |                |                                                                           |                                                                                     |                                           |                                              |                   |           | <b>400</b> | <b>12</b> |             |

**IV SEMESTER (A)**

| Sl. No       | Course | Course Code | Course Title                                                               | Teaching Hours /Week  |                          | Examination       |            |                        |             | Credits   |
|--------------|--------|-------------|----------------------------------------------------------------------------|-----------------------|--------------------------|-------------------|------------|------------------------|-------------|-----------|
|              |        |             |                                                                            | Theory                | Practical/<br>Field work | Duration in hours | CIE Marks  | SEE Marks<br>Viva voce | Total Marks |           |
|              |        |             |                                                                            | L                     | P                        |                   |            |                        |             |           |
| 1            | INT    | MINT481     | Research Internship / Industry Internship Leading to Project Work/Start-up | Two Semester Duration |                          | 03                | 100        | 100                    | 200         | 12        |
| 2            | PROJ   | MPRJ482     | Project                                                                    |                       |                          | 03                | 100        | 100                    | 200         | 16        |
| <b>TOTAL</b> |        |             |                                                                            |                       |                          | <b>06</b>         | <b>200</b> | <b>200</b>             | <b>400</b>  | <b>28</b> |

**INT:** Industry/ Research Internship leading to the project work /startup **PRJ:** Project work outcome of Internship (Project Phase-II is Viva voce SEE)

Taking up a two-semester Industry/Research Internship that leads to project work or a start-up can be a highly rewarding experience for students. It allows them to apply theoretical knowledge in practical settings, gain valuable industry or research experience, and potentially develop innovative solutions or business ideas. Here are some key steps and considerations for students pursuing such an internship:

**Industry Internship:** The main objective of the industry internship is to ensure that the intern is exposed to a real-world environment and gain practical experience. Often, it may be a practical exposure to the theory that has been learned during the academic period. The industry internship helps students understand of analytical concepts and tools, hone their skills in real-life situations, and build confidence in applying the skills learned.

**Research Internship:** A research internship is an opportunity for students or early career professionals to gain hands-on experience in conducting research under the guidance of a mentor or within a research team. These internships can take place in academic institutions, research organizations, government agencies, or private companies

**Research /Industry Internship:** In the third-semester Students have to be in touch with a guide/mentor/coordinator and regularly submit the report referred to the progress internship. Based on the progress report the Guide/Mentor/coordinator has to enter the CIE marks at the end of the 3<sup>rd</sup> semester. At the beginning of the 4<sup>th</sup> semester, students have to define the project topic out of the learning due to the Internship, upon completion of the project work he/she has to attend the SEE at the parent Institute.

**Internship Leading to Start-up:** An internship that leads to a startup is an exciting pathway, blending real-world experience with entrepreneurial ambition. Here's a comprehensive guide to transitioning an internship experience into launching your startup: 1) Maximize your internship experience, 2) Identifying Viable Business Ideas, 3) Research and Validation 4) Building a Business Plan 5) Networking and Mentorship 6) Securing Funding 7) Establishing Startup 8) Launching and Marketing. By following these steps, you can effectively transition from an internship to launching a successful startup. This journey requires dedication, resilience, and a willingness to learn and adapt.

**Mxxx311 to 313:**MOOC courses of 12 weeks duration are the courses suggested by the Board of Studies of the University and will be displayed on [www.online.vtu.ac.in](http://www.online.vtu.ac.in). The online courses selected should not be the same as those studied in the first and second semesters of the program. The student will not be eligible to get their degree if they unintentionally select online courses that match previously finished courses. These courses are not considered for the vertical progression; however, qualifying for these courses and earning the credits is a must for the award of the degree. It is permitted to complete these online MOOC courses either in 3<sup>rd</sup> semester or in 4<sup>th</sup> semester.

