

**GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)**

(Deemed to be University)

VISAKHAPATNAM \* HYDERABAD \* BENGALURU

Accredited by NAAC with A<sup>++</sup> Grade

## **GITAM School of Core Engineering**



## **CURRICULUM AND SYLLABUS**

### **4 Year Undergraduate Programme UEECE01: B.Tech. Electronics and Communication Engineering**

w.e.f. 2025-26 admitted batch

(Updated on July 2025)

# **Academic Regulations**

**Applicable for the Undergraduate Programmes in the  
School of Core Engineering**

**<https://www.gitam.edu/academics/academic-regulations>**

# **GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

## **Vision**

GITAM will be an exceptional knowledge-driven institution advancing on a culture of honesty and compassion to make a difference to the world.

## **Mission**

- Build a dynamic application-oriented education ecosystem immersed in holistic development.
- Nurture valuable futures with global perspectives for our students by helping them find their ikigai.
- Drive impactful integrated research programmes to generate new knowledge, guided by integrity, collaboration, and entrepreneurial spirit.
- Permeate a culture of kindness within GITAM, fostering passionate contributors.

## **Quality Policy**

To achieve global standards and excellence in teaching, research, and consultancy by creating an environment in which the faculty and students share a passion for creating, sharing and applying knowledge to continuously improve the quality of education.

## **VISION AND MISSION OF THE SCHOOL**

### **VISION**

To become a global leader in holistic engineering education and research

### **MISSION**

- To impart a strong academic foundation and practical education through a flexible curriculum, state-of-the-art infrastructure, and best learning resources
- To actively pursue academic and collaborative research with industries and research institutions, both in India and abroad
- To build a congenial and innovative eco system by enabling the latest technologies, thus helping the students, to solve the challenges of societal importance
- To provide our students with the appropriate leadership, management, communication skills and professional ethics for career success and to continuously impact the global lives

## **VISION AND MISSION OF THE DEPARTMENT**

### **VISION**

To become a global leader in holistic engineering education and research

### **MISSION**

- Empower the students with knowledge to face real-world challenges for holistic development.
- Conduct multidisciplinary research that makes an impact on society, addressing key challenges through innovative solutions.
- Foster a culture emphasizing empathy, respect, commitment upholding the ethical standards.

**UEECE01: B.Tech. Electronics and Communication Engineering**  
**(w.e.f. academic year 2024-25 admitted batch)**

**Programme Educational Objectives (PEOs)**

- PEO 1** Demonstrate comprehensive knowledge of analytical foundations to Electronics and Communication Engineering in terms of founding principles of circuits, design, computing, signal processing and communication.
- PEO 2** Demonstrate critical thinking and problem-solving abilities to handle the real-world problems by applying theoretical foundations and practical skills in different fields of Electronics and Communication Engineering.
- PEO 3** Exhibit qualities of teamwork, appreciation of collaboration that entails inter-disciplinary endeavors and the potential impact of technology on society.
- PEO 4** Develop creativity, Research related skills, self-learning, entrepreneurial and leadership skills in order to meet the ever-changing needs and challenges in the profession.

**PEO Articulation**

|           | <b>PEO1</b> | <b>PEO2</b> | <b>PEO3</b> | <b>PEO4</b> |
|-----------|-------------|-------------|-------------|-------------|
| <b>M1</b> | H           | H           | M           | M           |
| <b>M2</b> | M           | H           | M           | H           |
| <b>M3</b> | L           | M           | H           | M           |

H – High, M – Medium, L – Low

**Programme Outcomes (POs) and Programme Specific Outcomes (PSOs):**

At the end of the Programme the students would be able to:

- PO1** Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO3** Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4** Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9** Individual and teamwork: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11** Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

- PO12** Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
- PSO1** Demonstrate comprehensive knowledge and practical skills in Electronics and Communication Engineering focusing on subareas of Aerospace and Defence Electronics, Telecommunications, Sensors and IoT, AI and ML Applications and Software Defined Vehicles and apply this knowledge to solve advanced problems.
- PSO2** Design and translate abstract concepts in circuits, communications, signal processing, computing and sensing to real-time circuits & systems and analyze their performance.
- PSO3** Research and formulate suitable technologies for the implementation of Electronics and Communication Engineering solutions, demonstrating entrepreneurial and research aspects with a commitment to professional ethics and a focus on societal well-being.



# **Curriculum Structure**

## *(Flexible Credit System)*

**Minimum Credit Requirements for the Award of Degree**

| <b>S.No.</b> | <b>Course Category and Category Code</b> | <b>Minimum Credits</b> | <b>% of credits in the Programme</b> |
|--------------|------------------------------------------|------------------------|--------------------------------------|
| 1.           | University Core (UC)                     | 19                     | 11.87                                |
| 2.           | Faculty Core (FC)                        | 53                     | 33.13                                |
| 3.           | Programme Core (PC)                      | 49                     | 30.62                                |
| 4.           | Programme Electives (PE)                 | 15                     | 09.38                                |
| 5.           | Open Electives (OE)                      | 24                     | 15.00                                |
|              | <b>Total</b>                             | <b>160</b>             | <b>100</b>                           |

| University Core (UC) : 19 Credits                        |       |                                                                  |   |   |   |   |   |   |
|----------------------------------------------------------|-------|------------------------------------------------------------------|---|---|---|---|---|---|
| Course code                                              | Level | Course Title                                                     | L | T | P | S | J | C |
| <b>Ability Enhancement Courses</b>                       |       |                                                                  |   |   |   |   |   |   |
| LANG1201                                                 | 100   | <a href="#">Critical Thinking</a>                                | 2 | 0 | 0 | 0 | 0 | 2 |
| LANG1242                                                 | 100   | <a href="#">Communicative English - I</a>                        | 0 | 0 | 4 | 0 | 0 | 2 |
| LANG1252                                                 | 100   | <a href="#">Communicative English - II</a>                       | 0 | 0 | 4 | 0 | 0 | 2 |
| IENT1051                                                 | 100   | <a href="#">Fundamentals of Entrepreneurship</a>                 | 2 | 0 | 0 | 0 | 0 | 2 |
| <b>Skill Enhancement Courses</b>                         |       |                                                                  |   |   |   |   |   |   |
| GCGC1001                                                 | 100   | <a href="#">Aptitude and Self-Management Skills</a>              | 0 | 0 | 2 | 0 | 0 | 1 |
| GCGC1011                                                 | 100   | <a href="#">Integrated Aptitude and Ethical Communications</a>   | 0 | 0 | 2 | 0 | 0 | 1 |
| GCGC1021                                                 | 100   | <a href="#">Applied Communication and Quantitative Skills</a>    | 0 | 0 | 2 | 0 | 0 | 1 |
| GCGC1031                                                 | 100   | <a href="#">Placement Preparation and Professional Readiness</a> | 0 | 0 | 2 | 0 | 0 | 1 |
| <b>Value Added Courses</b>                               |       |                                                                  |   |   |   |   |   |   |
| ENVS1003                                                 | 100   | <a href="#">Environmental Studies*</a>                           | 3 | 0 | 0 | 0 | 0 | 3 |
| POLS1051                                                 | 100   | <a href="#">The Indian Constitution</a>                          | 1 | 0 | 0 | 0 | 0 | 1 |
| <b>Pass / Fail Courses (Mandatory)</b>                   |       |                                                                  |   |   |   |   |   |   |
| FINA1081                                                 | 100   | <a href="#">Personal Financial Planning *</a>                    | 1 | 0 | 0 | 0 | 0 | 1 |
| PHPY1011                                                 | 100   | <a href="#">Gandhi and the Contemporary World *</a>              | 1 | 0 | 0 | 0 | 0 | 1 |
| <b>Pass / Fail Courses (Any one course to be chosen)</b> |       |                                                                  |   |   |   |   |   |   |
| DOSP1181                                                 | 100   | <a href="#">Yogasana</a>                                         | 0 | 0 | 0 | 2 | 0 | 1 |
| MFST1002                                                 | 100   | <a href="#">Health and Wellbeing *</a>                           | 0 | 0 | 2 | 0 | 0 | 1 |
| DOSL1081                                                 | 100   | <a href="#">Student Life Activities (Participant)</a>            | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSL1091                                                 | 100   | <a href="#">Student Life Activities (Organizer)</a>              | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSL1101                                                 | 100   | <a href="#">Student Life Activities (Competitor)</a>             | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSL1111                                                 | 100   | <a href="#">Foundations of Student (Leadership)</a>              | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSL1042                                                 | 100   | <a href="#">Community Services – Volunteer</a>                   | 0 | 0 | 2 | 0 | 0 | 1 |
| DOSL1052                                                 | 100   | <a href="#">Community Services – Mobilizer</a>                   | 0 | 0 | 2 | 0 | 0 | 1 |
| DOSP1003                                                 | 100   | <a href="#">Badminton</a>                                        | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSP1033                                                 | 100   | <a href="#">Football</a>                                         | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSP1043                                                 | 100   | <a href="#">Volleyball</a>                                       | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSP1053                                                 | 100   | <a href="#">Kabaddi</a>                                          | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSP1073                                                 | 100   | <a href="#">Table Tennis</a>                                     | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSP1083                                                 | 100   | <a href="#">Handball</a>                                         | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSP1093                                                 | 100   | <a href="#">Basketball</a>                                       | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSP1113                                                 | 100   | <a href="#">Throw ball</a>                                       | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSP1142                                                 | 100   | <a href="#">Cricket</a>                                          | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSP1132                                                 | 100   | <a href="#">Functional Fitness</a>                               | 0 | 0 | 0 | 2 | 0 | 1 |
| DOSP1171                                                 | 100   | <a href="#">Martial Arts/Self Defence</a>                        | 0 | 0 | 0 | 2 | 0 | 1 |

\* Massive Open Online Course (MOOC)

| FACULTY CORE (FC) : 53 credits            |       |                                                                   |   |   |   |   |    |   |
|-------------------------------------------|-------|-------------------------------------------------------------------|---|---|---|---|----|---|
| Course code                               | Level | Course title                                                      | L | T | P | S | J  | C |
| MATH1341                                  | 100   | <a href="#">Calculus and Differential Equations</a>               | 3 | 1 | 0 | 0 | 0  | 4 |
| MATH1272                                  | 100   | <a href="#">Linear Algebra</a>                                    | 3 | 1 | 0 | 0 | 0  | 4 |
| MATH2581                                  | 200   | <a href="#">Probability theory and Random process</a>             | 3 | 1 | 0 | 0 | 0  | 4 |
| MATH2591                                  | 200   | <a href="#">Complex variables and transform techniques</a>        | 3 | 1 | 0 | 0 | 0  | 4 |
| PHYS1001                                  | 100   | <a href="#">Physics</a>                                           | 2 | 1 | 2 | 0 | 0  | 4 |
| CHEM1111                                  | 100   | <a href="#">Engineering Chemistry</a>                             | 2 | 1 | 2 | 0 | 0  | 4 |
| 24CSEN1031                                | 100   | <a href="#">Programming for Problem Solving - 1</a>               | 0 | 0 | 6 | 0 | 0  | 3 |
| 24CSEN1041                                | 100   | <a href="#">Programming for Problem Solving - 2</a>               | 0 | 0 | 6 | 0 | 0  | 3 |
| 24xxxxxxx                                 |       | Engineering Basket - Choice 1                                     | 2 | 0 | 2 | 0 | 0  | 3 |
| 24xxxxxxx                                 |       | Engineering Basket - Choice 2                                     | 2 | 0 | 2 | 0 | 0  | 3 |
| MECH1011                                  | 100   | <a href="#">Engineering Visualization and Product Realization</a> | 0 | 0 | 4 | 0 | 0  | 2 |
| MECH1041                                  | 100   | <a href="#">Technology Exploration and Product Engineering</a>    | 0 | 0 | 4 | 0 | 0  | 2 |
| 24PROJ4777                                | 400   | Capstone Project - Introduction                                   | 0 | 0 | 0 | 0 | 2  | 1 |
| 24IENT3777                                | 300   | Internship-1                                                      | 0 | 0 | 0 | 0 | 2  | 1 |
| 24PROJ4888/<br>24IENT4888 /<br>24RESH4888 | 400   | Capstone Project - Final /<br>Internship-2 /<br>Research          | 0 | 0 | 0 | 0 | 16 | 8 |
| HSMCH102                                  | 100   | Universal Human Values 2:<br>Understanding Harmony                | 2 | 1 | 0 | 0 | 0  | 3 |

Engineering Basket 1 & 2

Six credits have to be chosen from the basket other than Parent Department course.

| Course code | Level | Course title                                                           | L | T | P | S | J | C |
|-------------|-------|------------------------------------------------------------------------|---|---|---|---|---|---|
| 24EECE2221  | 200   | <a href="#">Fundamentals of Sensors and Internet of Things</a>         | 2 | 0 | 2 | 0 | 0 | 3 |
| 24EECE2211  | 200   | <a href="#">Fundamentals of Electrical and Electronics Engineering</a> | 2 | 0 | 2 | 0 | 0 | 3 |
| 24EECE2231  | 200   | <a href="#">Foundations of Electrical and Electronics Engineering</a>  | 3 | 0 | 2 | 0 | 0 | 4 |
| 24MECH1001  | 100   | <a href="#">Introduction to Mechanical Engineering</a>                 | 2 | 0 | 2 | 0 | 0 | 3 |
| 24CIVL1001  | 100   | <a href="#">Introduction to Civil Engineering</a>                      | 2 | 0 | 2 | 0 | 0 | 3 |
| 24BTEN1021  | 100   | <a href="#">Biotechnology and Bioengineering</a>                       | 2 | 0 | 2 | 0 | 0 | 3 |
| 24BTEN1031  | 100   | <a href="#">Introduction to Biomedical Engineering</a>                 | 2 | 0 | 2 | 0 | 0 | 3 |
| 24CSEN2261  | 200   | <a href="#">Data Structures and Algorithms</a>                         | 2 | 0 | 2 | 0 | 0 | 3 |

| <b>Programme Core (PC) : 49 credits</b>                        |              |                                                              |          |          |          |          |          |          |
|----------------------------------------------------------------|--------------|--------------------------------------------------------------|----------|----------|----------|----------|----------|----------|
| <b>49 credits to be earned through programme core courses.</b> |              |                                                              |          |          |          |          |          |          |
| <b>Course code</b>                                             | <b>Level</b> | <b>Course Title</b>                                          | <b>L</b> | <b>T</b> | <b>P</b> | <b>S</b> | <b>J</b> | <b>C</b> |
| 24EECE1001                                                     | 100          | <a href="#">Network Theory and Analysis</a>                  | 2        | 1        | 0        | 0        | 0        | 3        |
| 24EECE2001                                                     | 200          | <a href="#">Electronic Devices and Circuits</a>              | 3        | 0        | 2        | 0        | 0        | 4        |
| 24EECE2071                                                     | 200          | <a href="#">Analog Circuits</a>                              | 3        | 0        | 2        | 0        | 0        | 4        |
| 24EECE3001                                                     | 300          | <a href="#">Introduction to VLSI Design</a>                  | 3        | 0        | 2        | 0        | 0        | 4        |
| 24EECE2011                                                     | 200          | <a href="#">Signals and Systems</a>                          | 2        | 1        | 0        | 0        | 0        | 3        |
| 24EECE2111                                                     | 200          | <a href="#">Electromagnetic Waves and Transmission Lines</a> | 2        | 1        | 0        | 0        | 0        | 3        |
| 24EECE3011                                                     | 300          | <a href="#">Antennas Analysis and Design</a>                 | 2        | 0        | 2        | 0        | 0        | 3        |
| 24EECE3021                                                     | 300          | <a href="#">Analog and Digital Communications</a>            | 3        | 0        | 2        | 0        | 0        | 4        |
| 24EECE3031                                                     | 300          | <a href="#">Data Communication and Networking</a>            | 3        | 0        | 0        | 0        | 0        | 3        |
| 24EECE3041                                                     | 300          | <a href="#">Control Systems</a>                              | 2        | 1        | 0        | 0        | 0        | 3        |
| 24EECE2291                                                     | 200          | <a href="#">Digital Logic Design</a>                         | 3        | 0        | 2        | 0        | 0        | 4        |
| 24EECE3051                                                     | 300          | <a href="#">Computer Organization and Design</a>             | 3        | 0        | 0        | 0        | 0        | 3        |
| 24EECE3061                                                     | 300          | <a href="#">Microprocessors and Microcontrollers</a>         | 3        | 0        | 2        | 0        | 0        | 4        |
| 24EECE3071                                                     | 300          | <a href="#">Digital Signal Processing</a>                    | 3        | 0        | 2        | 0        | 0        | 4        |

| <b>Programme Elective (PE) : 15 credits</b>               |              |                                                            |          |          |          |          |          |          |
|-----------------------------------------------------------|--------------|------------------------------------------------------------|----------|----------|----------|----------|----------|----------|
| <b>A minimum of 15 credits from any one of the tracks</b> |              |                                                            |          |          |          |          |          |          |
| <b>Track # Aerospace &amp; Defence Electronics</b>        |              |                                                            |          |          |          |          |          |          |
| <b>Course code</b>                                        | <b>Level</b> | <b>Course Title</b>                                        | <b>L</b> | <b>T</b> | <b>P</b> | <b>S</b> | <b>J</b> | <b>C</b> |
| 24AERO2091                                                | 200          | <a href="#">Aerospace and Defence Electronics Basics</a>   | 3        | 0        | 0        | 0        | 0        | 3        |
| 24AERO3221                                                | 300          | <a href="#">Avionics Systems and Technologies</a>          | 3        | 0        | 0        | 0        | 0        | 3        |
| 24EECE4001                                                | 400          | <a href="#">Satellite Communications</a>                   | 3        | 0        | 0        | 0        | 0        | 3        |
| 24EECE3081                                                | 300          | <a href="#">Radar Systems and Signal Processing</a>        | 3        | 0        | 0        | 0        | 0        | 3        |
| 24CSEN2301                                                | 200          | <a href="#">Fundamentals of Cyber Security</a>             | 2        | 0        | 2        | 0        | 0        | 3        |
| 24EECE3091                                                | 300          | <a href="#">Electromagnetic Compatibility</a>              | 3        | 0        | 0        | 0        | 0        | 3        |
| 24EECE3101                                                | 300          | <a href="#">Digital Image Processing</a>                   | 3        | 0        | 0        | 0        | 0        | 3        |
| 24EECE3111                                                | 300          | <a href="#">Command, Control and Communication Systems</a> | 3        | 0        | 0        | 0        | 0        | 3        |
| 24EECE3121                                                | 300          | <a href="#">Jamming and ECM/ECCM Technologies</a>          | 3        | 0        | 0        | 0        | 0        | 3        |
| 24EECE2301                                                | 200          | <a href="#">Embedded Systems</a>                           | 2        | 0        | 2        | 0        | 0        | 3        |
| 24EECE4011                                                | 400          | <a href="#">Unmanned Aerial Vehicles</a>                   | 2        | 0        | 2        | 0        | 0        | 3        |
| 24EECE3131                                                | 300          | <a href="#">Electronic Packaging and Testing</a>           | 3        | 0        | 0        | 0        | 0        | 3        |

|                                         |     |                                                                                                         |   |   |   |   |   |   |
|-----------------------------------------|-----|---------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|
| <b>Track # : Telecommunications</b>     |     |                                                                                                         |   |   |   |   |   |   |
| 24EECE4021                              | 400 | <a href="#">Software Defined Radio and Networks</a>                                                     | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE4001                              | 400 | <a href="#">Satellite Communications</a>                                                                | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE4031                              | 400 | <a href="#">Optical Communications and Networks</a>                                                     | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3141                              | 300 | <a href="#">Principles of Radar Systems</a>                                                             | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3151                              | 300 | <a href="#">Information Theory and Coding</a>                                                           | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3161                              | 300 | <a href="#">Fundamentals of Wireless Communications</a>                                                 | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3171                              | 300 | <a href="#">Mobile Communication System with Optimization</a>                                           | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE2021                              | 200 | <a href="#">Applied Linear Algebra with Machine Learning, Wireless Communication and Data Analytics</a> | 2 | 0 | 2 | 0 | 0 | 3 |
| 24EECE4041                              | 400 | <a href="#">LTE and Advanced LTE Technologies for Mobile Communications</a>                             | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE4051                              | 400 | <a href="#">5G Technologies and Its Applications</a>                                                    | 3 | 0 | 0 | 0 | 0 | 3 |
| <b>Track # : Sensors and IoT</b>        |     |                                                                                                         |   |   |   |   |   |   |
| 24EECE2031                              | 200 | <a href="#">Introduction to IoT and its Applications</a>                                                | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE2041                              | 200 | <a href="#">IoT Sensors and Actuators</a>                                                               | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3181                              | 300 | <a href="#">IoT Architecture and Protocols</a>                                                          | 3 | 0 | 0 | 0 | 0 | 3 |
| 24CSEN3261                              | 300 | <a href="#">IoT Security and Privacy</a>                                                                | 3 | 0 | 0 | 0 | 0 | 3 |
| 24CSEN3271                              | 300 | <a href="#">Cloud Computing for IoT</a>                                                                 | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE2051                              | 200 | <a href="#">Embedded Systems for IoT</a>                                                                | 2 | 0 | 2 | 0 | 0 | 3 |
| 24EECE4061                              | 400 | <a href="#">Wireless Sensor Networks</a>                                                                | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3191                              | 300 | <a href="#">IoT Device Design and Development</a>                                                       | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3201                              | 300 | <a href="#">Industrial IoT and Automation</a>                                                           | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3211                              | 300 | <a href="#">IoT for Transportation</a>                                                                  | 3 | 0 | 0 | 0 | 0 | 3 |
| <b>Track # : AI and ML Applications</b> |     |                                                                                                         |   |   |   |   |   |   |
| 24CSEN2311                              | 200 | <a href="#">Machine Learning Techniques</a>                                                             | 2 | 0 | 2 | 0 | 0 | 3 |
| 24CSEN2321                              | 200 | <a href="#">Fundamentals of Neural Networks</a>                                                         | 2 | 0 | 2 | 0 | 0 | 3 |
| 24CSEN2331                              | 200 | <a href="#">Fundamentals of Deep Learning</a>                                                           | 2 | 0 | 2 | 0 | 0 | 3 |
| 24CSEN3281                              | 300 | <a href="#">Fundamentals of Natural Language Processing</a>                                             | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE4071                              | 400 | <a href="#">Machine Learning for Audio, Image, and Video Analysis</a>                                   | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE4081                              | 400 | <a href="#">Machine Learning for Antenna Array Applications</a>                                         | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE4091                              | 400 | <a href="#">Applications of Artificial Intelligence in VLSI Design</a>                                  | 3 | 0 | 0 | 0 | 0 | 3 |

|                                            |     |                                                                                 |   |   |   |   |   |   |
|--------------------------------------------|-----|---------------------------------------------------------------------------------|---|---|---|---|---|---|
| 24EECE4101                                 | 400 | <a href="#">Wireless Communications with Artificial Intelligence</a>            | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE4111                                 | 400 | <a href="#">Embedded Systems with Artificial Intelligence</a>                   | 3 | 0 | 0 | 0 | 0 | 3 |
| <b>Track # : Software Defined Vehicles</b> |     |                                                                                 |   |   |   |   |   |   |
| 24MECH2081                                 | 200 | <a href="#">Fundamentals of Automotive Engineering</a>                          | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3221                                 | 300 | <a href="#">Introduction to Automotive Electronics and Vehicle Architecture</a> | 3 | 0 | 0 | 0 | 0 | 3 |
| 24CSEN2341                                 | 200 | <a href="#">Software Engineering for Automotive Applications</a>                | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3231                                 | 300 | <a href="#">Vehicle Networks and Communication Protocols</a>                    | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3241                                 | 300 | <a href="#">Automotive Embedded Systems and Operating Systems</a>               | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3251                                 | 300 | <a href="#">Model Based System Design</a>                                       | 3 | 0 | 0 | 0 | 0 | 3 |
| 24CSEN3291                                 | 300 | <a href="#">Automotive Cyber Security</a>                                       | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE4121                                 | 400 | <a href="#">Advanced Driver Assistance Systems (ADAS) System Design</a>         | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE3261                                 | 300 | <a href="#">Introduction to AUTOSAR</a>                                         | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE4131                                 | 400 | <a href="#">Vehicle-to-Everything (V2X) Communications</a>                      | 3 | 0 | 0 | 0 | 0 | 3 |
| 24EECE2061                                 | 200 | <a href="#">Introduction to Electric Vehicle Technologies</a>                   | 3 | 0 | 0 | 0 | 0 | 3 |

## Open Electives (OE)

The minimum credit requirement under this category of course is 24. Students can earn up to 9 credits from courses offered by other departments in the same school and up to 15 credits are courses offered by other schools of the university.

## Minor

Students may opt to enroll in a Minor programme for 20 Credits extra beyond the academic requirement of 160 Credits to obtain the B.Tech. degree.

The list of available Minor Programmes are listed [here](#)



---

**GITAM School of Core Engineering**  
**GITAM (Deemed to be University)**  
**Visakhapatnam | Hyderabad | Bengaluru**