

## KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

(An Autonomous Institute under Kakatiya University, Warangal)

(Approved by AICTE, New Delhi; Recognised by UGC under 2(f) & 12(B); Sponsored by EKASILA EDUCATION SOCIETY)

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506 015, Telangana, INDIA.

కాకతీయ ప్రేఢ్యోగికీ ంవం విజ్ఞాన సంస్థాన, వరంగల - 506 015

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - 506 015

website: [www.kitsw.ac.in](http://www.kitsw.ac.in)

E-mail: [principal@kitsw.ac.in](mailto:principal@kitsw.ac.in)

☎ : +91 9392055211, +91 7382564888

### DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

## B.Tech– ELECTRONICS COMMUNICATION & INSTRUMENTATION ENGINEERING (ECI)

### URR18 SCHEME (I to VIII SEMESTERS)

(Applicable from the Academic Year 2018-19)



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काकतीय प्रौद्योगिकी एवं विज्ञान संस्थान, वरंगल - ५०६ ०१५

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### VISION OF THE INSTITUTE

- To make our students technologically superior and ethically strong by providing quality education with the help of our dedicated faculty and staff and thus improve the quality of human life

### MISSION OF THE INSTITUTE

- To provide latest technical knowledge, analytical and practical skills, managerial competence and interactive abilities to students, so that their employability is enhanced
- To provide a strong human resource base for catering to the changing needs of the Industry and Commerce
- To inculcate a sense of brotherhood and national integrity

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### VISION OF THE DEPARTMENT

- Develop the department into a full-fledged center of learning in various fields of Electronics and Communication Engineering in pursuit of excellence in Education, Research, Entrepreneurship and Technological services to the society

### MISSION OF THE DEPARTMENT

- Imparting quality education to develop innovative and entrepreneurial professionals fit for globally competitive environment
- To nurture the students in the field of Electronics and Communication Engineering with an overall background suitable for attaining a successful career in higher education, research and industry

## PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

### UG - ELECTRONICS COMMUNICATION AND INSTRUMENTATION ENGINEERING – ECI


| PROGRAM EDUCATIONAL OBJECTIVES (PEOs)                     | Within first few years after graduation, the Electronics Communication and Instrumentation Engineering graduates will be able to ...   |
|---|--|
| <b>PEO1:</b><br><b>Technical Expertise</b>                | apply the knowledge of core courses of electronics communication and instrumentation engineering for development of effective and innovative solutions to engineering problems   |
| <b>PEO2:</b><br><b>Successful Career</b>                  | excel in profession, higher education and entrepreneurship with updated technologies in communication, signal processing, vlsi, embedded systems, and instrumentation domains    |
| <b>PEO3:</b><br><b>Soft Skills and Life Long Learning</b> | exhibit professional ethics, effective communication, and teamwork in solving engineering problems by adapting contemporary research towards sustainable development of society. |

## PROGRAM OUTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)

### UG - ELECTRONICS COMMUNICATION AND INSTRUMENTATION ENGINEERING – ECI

|  |  |
|--|--|
| <b>PROGRAM OUTCOMES (POs)</b>                          | <b>At the time of graduation, the Electronics and Communication Engineering graduates will be able to ...</b>  |
| <b>PO1: Engineering knowledge</b>                      | <i>apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.</i>   |
| <b>PO2: Problem analysis</b>                           | <i>identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences</i>  |
| <b>PO3: Design/development of solutions</b>            | <i>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.</i>                          |
| <b>PO4: Conduct investigations of complex problems</b> | <i>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.</i>  |
| <b>PO5: Modern tool usage</b>                          | <i>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.</i>  |
| <b>PO6: The engineer and society</b>                   | <i>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.</i>   |
| <b>PO7: Environment and sustainability</b>             | <i>understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.</i>   |
| <b>PO8: Ethics</b>                                     | <i>apply ethical principles and commit to professional ethics, responsibilities, and norms of the engineering practice</i>   |
| <b>PO9: Individual and team work</b>                   | <i>function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings</i>  |
| <b>PO10: Communication</b>                             | <i>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</i> |
| <b>PO11: Project management and finance</b>            | <i>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</i>  |
| <b>PO12: Life-long learning</b>                        | <i>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</i>  |
| <b>PROGRAM SPECIFIC OUTCOMES (PSOs):</b>               |  |
| <b>PSO1</b>  | <i>Apply the fundamentals of Electronics, Communication Signal processing, VLSI, Embedded Systems and Instrumentation in development of hardware and software prototypes and systems for complex engineering problems.</i>   |
| <b>PSO2</b>  | <i>Apply appropriate methodology, contemporary hardware and software tools to solve complex engineering problems related to embedded systems.</i>  |

ISO 9001:2015      AICTE-CII: GOLD Category Institute      NAAC-'A' Grade Institute (CGPA: 3.21)      NIRF-2020 Rank Band: 201-250



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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**  
**SCHEME OF INSTRUCTION & EVALUATION**  
**I - SEMESTER OF 4-YEAR B.TECH ECI DEGREE PROGRAMME**

**BRANCH: B.Tech. – CE / EEE / ECE/ECI/CSE (AI &ML) (Stream –II) SEMESTER : FIRST [First year]**

| Sl.No | Category | Course Code | Course Title                                       | Hour per week |   |    | Credits | Evaluation Scheme |     |     | ESE | Total Marks |       |
|-------|----------|-------------|--|---------------|---|----|---------|-------------------|-----|-----|-----|-------------|-------|
|       |          |             |  | L             | T | P  |         | C                 | CIE |     |     |             |       |
|       |          |             |  |               |   |    |         |                   | TA  | MSE |     |             | Total |
| 1     | BSC      | U18MH101    | Engineering Mathematics – I                        | 3             | 1 | -  | 4       | 10                | 30  | 40  | 60  | 100         |       |
| 2     | ESC      | U18CS102    | Programming for Problem Solving using C            | 3             | - | -  | 3       | 10                | 30  | 40  | 60  | 100         |       |
| 3     | BSC      | U18CH103    | Engineering Chemistry                              | 3             | 1 | -  | 4       | 10                | 30  | 40  | 60  | 100         |       |
| 4     | ESC      | U18ME104    | Engineering Drawing                                | 2             | - | 4  | 4       | 10                | 30  | 40  | 60  | 100         |       |
| 5     | ESC      | U18CE105    | Engineering Mechanics                              | 3             | 1 | -  | 4       | 10                | 30  | 40  | 60  | 100         |       |
| 6     | ESC      | U18CS107    | Programming for Problem Solving using C Laboratory | -             | - | 2  | 1       | 40                | -   | 40  | 60  | 100         |       |
| 7     | BSC      | U18CH108    | Engineering Chemistry Laboratory                   | -             | - | 2  | 1       | 40                | -   | 40  | 60  | 100         |       |
| 8     | MC       | U18CH109    | Environmental Studies*                             | 2             | - | -  | -       | 10                | 30  | 40  | 60  | 100         |       |
| 9     | MC       | U18EA110    | EAA* : Sports/Yoga/NSS                             | -             | - | 2  | -       | 100               | -   | 100 | -   | 100         |       |
| 10    | MC       | U18MH111    | Universal Human Values –I (Induction program)      | -             | - | -  | -       | -                 | -   | -   | -   | -           |       |
| Total |          |             |  | 16            | 3 | 10 | 21      | 240               | 180 | 420 | 480 | 900         |       |

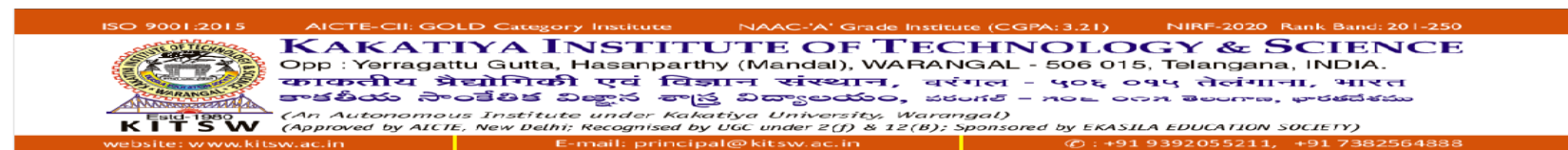
**L - Lectures; T – Tutorials; P – Practicals C = Credits**

**EAA – Extra Academic Activity**

**\* indicates mandatory non-credit course**

**Contact hours per Week : 29**

**TotalCredits : 21**



## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

### SCHEME OF INSTRUCTION & EVALUATION

#### II - SEMESTER OF 4-YEAR B.TECH ECI DEGREE PROGRAMME

BRANCH: B.Tech. - CE / EEE / ECE/ECI/CSE (AI & ML) (Stream -II) SEMESTER : SECOND

[First year]

| Sl.No | Category | Course Code | Course Title                            | Hour per week |   |    | Credits | Evaluation Scheme |     |     |       |      |             |
|-------|----------|-------------|---|---------------|---|----|---------|-------------------|-----|-----|-------|------|-------------|
|       |          |             |   | L             | T | P  |         | C                 | CIE |     |       | ESE  | Total Marks |
|       |          |             |   |               |   |    |         |                   | TA  | MSE | Total |      |             |
| 1     | BSC      | U18MH201    | Engineering Mathematics - II            | 3             | 1 | -  | 4       | 10                | 30  | 40  | 60    | 100  |             |
| 2     | ESC      | U18CS202    | Data Structures through C               | 3             | - | -  | 3       | 10                | 30  | 40  | 60    | 100  |             |
| 3     | BSC      | U18PH203    | Engineering Physics                     | 3             | 1 | -  | 4       | 10                | 30  | 40  | 60    | 100  |             |
| 4     | HSMC     | U18MH204    | English for Communication               | 2             | - | 2  | 3       | 10                | 30  | 40  | 60    | 100  |             |
| 5     | ESC      | U18EE205    | Basic Electrical Engineering            | 3             | 1 | -  | 4       | 10                | 30  | 40  | 60    | 100  |             |
| 6     | ESC      | U18EE206    | Basic Electrical Engineering Laboratory | -             | - | 2  | 1       | 40                | -   | 40  | 60    | 100  |             |
| 7     | ESC      | U18CS207    | Data Structures through C Laboratory    | -             | - | 2  | 1       | 40                | -   | 40  | 60    | 100  |             |
| 8     | BSC      | U18PH208    | Engineering Physics Laboratory          | -             | - | 2  | 1       | 40                | -   | 40  | 60    | 100  |             |
| 9     | ESC      | U18ME209    | Workshop Practice                       | -             | - | 2  | 1       | 40                | -   | 40  | 60    | 100  |             |
| 10    | MC       | U18EA210    | EAA* : Sports/Yoga/NSS                  | -             | - | 2  | -       | 100               | -   | 100 | -     | 100  |             |
| Total |          |             |   | 14            | 3 | 12 | 22      | 310               | 150 | 460 | 540   | 1000 |             |

L - Lectures; T – Tutorials; P – Practicals& Credits

EAA – Extra Academic Activity

\* indicates mandatory non-credit course

Contact hours per Week : 29

Total Credits : 22

**Internship:** All Students should plan for mandatory 6-8 weeks internship, from end of II semester to commencement of VII semester, at industry/R&D organizations/ institutes of national importance (IITs/IIITs/NITs). As part of Internship evaluation in VII semester, students are expected to submit a well-documented internship report and give an informative PPT presentation.



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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**  
**SCHEME OF INSTRUCTION & EVALUATION**  
**III - SEMESTER OF 4-YEAR B.TECH ECI DEGREE PROGRAMME**

[6+2+1M]

| Sl.No  | Category | Course Code | Course Title                                   | Hour per week |   |   | Credits | Evaluation Scheme |     |       |     |             |
|--------|----------|-------------|--|---------------|---|---|---------|-------------------|-----|-------|-----|-------------|
|        |          |             |  | L             | T | P |         | CIE               |     |       | ESE | Total Marks |
|        |          |             |  |               |   |   |         | TA                | MSE | Total |     |             |
| 1      | BSC      | U18MH301    | Engineering Mathematics - III                  | 3             | 1 | - | 4       | 10                | 30  | 40    | 60  | 100         |
| 2      | HSMC     | U18TP302    | Soft and Interpersonal Skills                  | -             | - | 2 | 1       | 100               | -   | 100   | -   | 100         |
| 3      | OE       | U18OE303    | Open Elective-I                                | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 4      | PCC      | U18CI304    | Signals Systems and Random Processes           | 3             | 1 | - | 4       | 10                | 30  | 40    | 60  | 100         |
| 5      | PCC      | U18CI305    | Electronic Devices and Applications            | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 6      | PCC      | U18CI306    | Electronic Measurements and Sensors            | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 7      | PCC      | U18CI307    | Digital Circuits and Logic Design              | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 8      | PCC      | U18CI308    | Electronic Measurements and Sensors Laboratory | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| 9      | OE       | U18OE311    | Open Elective-I based Laboratory               | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| Total: |          |             |  | 18            | 2 | 6 | 23      | 240               | 180 | 420   | 480 | 900         |

L= Lecture, T = Tutorials, P = Practicals & C = Credits

**Open Elective-I:**

- U18OE303A: Object Oriented Programming (CSE)
- U18OE303B: Fluid Mechanics and Hydraulic Machines (CE)
- U18OE303C: Fundamentals of Mechatronics (ME)
- U18OE303D: Web Programming (IT)
- U18OE303F: Strength of Materials (CE)


**Open Elective-I based Laboratory**

- U18OE311A: Object Oriented Programming Lab (CSE)
- U18OE311B: Fluid Mechanics and Hydraulic Machines Lab (CE)
- U18OE311C: Mechatronics Lab (ME)
- U18OE311D: Web Programming Lab (IT)
- U18OE311F: Strength of Materials Lab (CE)

Contact hours per week : 26  
 Total Credits : 23

**Internship:** All Students should plan for mandatory 6-8 weeks internship, from end of II semester to commencement of VII semester, at industry/R&D organizations/ institutes of national importance (IITs/IITs/NITs). As part of Internship evaluation in VII semester, students are expected to submit a well-documented internship report and give an informative PPT presentation.

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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**SCHEME OF INSTRUCTION & EVALUATION**

**IV - SEMESTER OF 4-YEAR B.TECH ECI DEGREE PROGRAMME**

[5Th+3P+2M]

| S.No  | Category | Course Code | Course Title                                  | Hour per week |   |   | Credits | Evaluation Scheme |     |       |     |             |
|-------|----------|-------------|---|---------------|---|---|---------|-------------------|-----|-------|-----|-------------|
|       |          |             |   | L             | T | P |         | CIE               |     |       | ESE | Total Marks |
|       |          |             |   |               |   |   |         | TA                | MSE | Total |     |             |
| 1     | OE       | U180E401    | Open Elective-II                              | 3             | 1 | - | 4       | 10                | 30  | 40    | 60  | 100         |
| 2     | HSMC     | U18MH402    | Professional English                          | -             | - | 2 | 1       | 100               | -   | 100   | -   | 100         |
| 3     | PCC      | U18CI403    | Electromagnetic Theory and Transmission Lines | 3             | 1 | - | 4       | 10                | 30  | 40    | 60  | 100         |
| 4     | PCC      | U18CI404    | Analog Electronic Circuits                    | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 5     | PCC      | U18CI405    | Digital Signal Processing                     | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 6     | PCC      | U18CI410    | Microprocessor Systems and Interfacing        | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 7     | MC       | U18MH415    | Essence of Indian Traditional Knowledge       | 2             | - | - | -       | 10                | 30  | 40    | 60  | 100         |
| 8     | PCC      | U18CI407    | Programing with Python Laboratory             | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| 9     | PCC      | U18CI408    | Electronic Devices and Circuits Laboratory    | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| 10    | PCC      | U18CI409    | Signal Processing and Applications Laboratory | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| Total |          |             |   | 17            | 2 | 8 | 21      | 280               | 180 | 460   | 540 | 1000        |
| 11    | MC       | U18CH416    | Environmental Studies *                       | 2             | - | - | 0       | 10                | 30  | 40    | 60  | 100         |

L= Lecture, T = Tutorials, P = Practicals & C = Credits

\* indicates Mandatory Non-Credit course for Lateral Entry Students Only

**Open Elective-II**

U180E401A: Applicable Mathematics (M&H)

U180E401C: Elements of Mech. Engg. (ME)

U180E401E: Computers Networks (IT)


U180E401F: Renewable Energy Sources (EEE)

**Contact hours per week      27**

**Total Credits                      21**

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**DEPARTMENT OF ELELCTRONICS & COMMUNICATION ENGINEERING**

**SCHEME OF INSTRUCTION & EVALUATION**

**V - SEMESTER OF 4-YEAR B.TECH ECI DEGREE PROGRAMME**

[5Th+3P+1MC]

| Sl.No  | Category | Course Code | Course Title                                      | Hour per week |   |   | Credits | Evaluation Scheme |     |       |     |             |
|--------|----------|-------------|---|---------------|---|---|---------|-------------------|-----|-------|-----|-------------|
|        |          |             |   | L             | T | P |         | CIE               |     |       | ESE | Total Marks |
|        |          |             |   |               |   |   |         | TA                | MSE | Total |     |             |
| 1      | MC       | U18MH501    | Universal Human Values - II                       | 2             | - | - | -       | 10                | 30  | 40    | 60  | 100         |
| 2      | PE       | U18CI502    | Professional Elective - I / MOOCs – I             | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 3      | PCC      | U18CI503    | Analog and Digital Communications                 | 3             | 1 | - | 4       | 10                | 30  | 40    | 60  | 100         |
| 4      | ESC      | U18EE511    | Linear Control Systems                            | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 5      | PCC      | U18CI509    | Microcontrollers and Embedded Systems             | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 6      | PCC      | U18CI505    | Linear Integrated Circuits and Applications       | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 7      | PCC      | U18CI506    | Embedded Firmware Development Laboratory          | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| 8      | PCC      | U18CI507    | Analog and Digital Communications Laboratory      | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| 9      | PCC      | U18CI508    | Linear and Digital Integrated Circuits Laboratory | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| 11     | PROJ     | U18CI510    | Seminar   | -             | - | 2 | 1       | 100               | -   | 100   | -   | 100         |
| Total: |          |             |   | 17            | 1 | 8 | 20      | 280               | 180 | 460   | 540 | 1000        |

L= Lecture, T = Tutorials, P = Practical's & C = Credits

| Professional Elective-II:<br>(offered by department) |  | SWAYAM - NPTEL Equivalent course  |
|--|--|---|
| U18CI502A:   | Internet of things                       | Introduction to Internet of things  |
| U18CI502B:   | Wireless and Data Communication          | Introduction to Wireless and Cellular communications  |
| U18CI502C:   | Data Acquisition And Signal Conditioning | --  |
| MOOC-II: U18CI603M SWAYAM -MOOC course               |  | (i) Fabrication Techniques for MEMS based sensors – Clinical perspective<br>(ii) Programming, Data Structures And Algorithms Using Python |

Contact hours per week : 26


Total Credits : 20

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**Internship:** All Students should plan for mandatory 6-8 weeks internship, from end of II semester to commencement of VII semester, at industry/R&D organizations/ institutes of national importance (IITs/IIITs/NITs). As part of Internship evaluation in VII semester, students are expected to submit a well-documented internship report and give an informative PPT presentation.



ISO 9001:2015    AICTE-CII: GOLD Category Institute    NAAC-'A' Grade Institute (CGPA: 3.21)    NIRF-2020 Rank Band: 201-250



**KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE**  
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 काकतीय प्रौद्योगिकी एवं विज्ञान संस्थान, वरंगल - ५०६ ०१५ तेलंगाना, भारत  
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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**SCHEME OF INSTRUCTION & EVALUATION**

**VI - SEMESTER OF 4-YEAR B.TECH ECI DEGREE PROGRAMME**

**[5Th+3P+2MC]**

| Sl.No  | Category | Course Code | Course Title                                   | Hour per week |   |   | Credits | Evaluation Scheme |     |       |     |             |
|--------|----------|-------------|--|---------------|---|---|---------|-------------------|-----|-------|-----|-------------|
|        |          |             |  | L             | T | P |         | CIE               |     |       | ESE | Total Marks |
|        |          |             |  |               |   |   |         | TA                | MSE | Total |     |             |
| 1      | HSMC     | U18TP601    | Quantitative Aptitude and Logical Reasoning    | 2             | - | - | 1       | 10                | 30  | 40    | 60  | 100         |
| 2      | HSMC     | U18MH602    | Management Economics and Accountancy           | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 3      | PE       | U18CI603    | Professional Elective -II / MOOCs-II           | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 4      | PCC      | U18CI 604   | Embedded Systems with ARM Processor            | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 5      | PCC      | U18CI 605   | VLSI System Design                             | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 6      | PCC      | U18CI 606   | Artificial Intelligence and Machine Learning   | 3             | - | - | 3       | 10                | 30  | 40    | 60  | 100         |
| 7      | PCC      | U18CI 607   | Digital Design Laboratory                      | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| 8      | PCC      | U18CI 608   | Embedded Systems with ARM Processor Laboratory | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| 9      | PCC      | U18CI 609   | IoT and Data Acquisition Laboratory            | -             | - | 2 | 1       | 40                | -   | 40    | 60  | 100         |
| 10     | PROJ     | U18CI610    | Mini Project                                   | -             | - | 2 | 1       | 100               | -   | 100   | -   | 100         |
| Total: |          |             |  | 17            | - | 8 | 20      | 280               | 180 | 460   | 540 | 1000        |

**L= Lecture, T = Tutorials, P = Practicals& C = Credits**

| Professional Elective-II:<br>(offered by department) |   | SWAYAM - NPTEL Equivalent course   |
|--|---|--|
| 18CI603A:  | Antennas and Wave Propagation             | Antennas   |
| U18CI603B:   | Wireless Sensor Networks and Applications | --   |
| U18CI603C:   | Biomedical Instrumentation                | --   |
| MOOC-II: U18CI603M SWAYAM -MOOC course               |   | (i) Fuzzy sets, logic & Systems and Applications<br>(ii) Fundamentals of MIMO wireless communication |


**Contact hours per week : 25**

**Total Credits : 20**

**MOOCs:** Students are encouraged to do Massive Open Online Courses (MOOCs) on SWAYAM platform (<https://www.swayam.gov.in>) offered by NPTEL, CEC, IIM-B, IGNOU. Students shall contact the HoD to get their interested MOOCs approved by the HoD/ Dean Academic Affairs for proper transfer the credits for the MOOCs.

**Internship:** All Students should plan for mandatory 6-8 weeks internship, from end of II semester to commencement of VII semester, at industry/R&D organizations/ institutes of national importance (IITs/IIITs/NITs). As part of Internship evaluation in VII semester, students are expected to submit a well-documented internship report and give an informative PPT presentation.

ISO 9001:2015 AICTE-CII: GOLD Category Institute NAAC-'A' Grade Institute (CGPA:3.21) NIRF-2020 Rank Band: 201-250



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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**SCHEME OF INSTRUCTION & EVALUATION**

**VII - SEMESTER OF 4-YEAR B.TECH ECI DEGREE PROGRAMME**

[4Th+2P+1MC]

| S. No         | Category | Course Code | Course Title                             | Hour per week |          |           | Credits   | Evaluation Scheme |            |            |            |             |
|---------------|----------|-------------|--|---------------|----------|-----------|-----------|-------------------|------------|------------|------------|-------------|
|               |          |             |  | L             | T        | P         |           | CIE               |            |            | ESE        | Total Marks |
|               |          |             |  |               |          |           |           | TA                | MSE        | Total      |            |             |
| 1             | OE       | U18OE701    | Open Elective- III                       | 3             | -        | -         | 3         | 10                | 30         | 40         | 60         | 100         |
| 2             | PE       | U18CI 702   | Professional Elective – III/ MOOCs - III | 3             | -        | -         | 3         | 10                | 30         | 40         | 60         | 100         |
| 3             | PE       | U18CI 703   | Professional Elective - IV/ MOOCs - IV   | 3             | -        | -         | 3         | 10                | 30         | 40         | 60         | 100         |
| 4             | PCC      | U18CI 704   | Industrial Process Control               | 3             | -        | -         | 3         | 10                | 30         | 40         | 60         | 100         |
| 5             | PCC      | U18CI 705   | Industrial Process Control Laboratory    | -             | -        | 2         | 1         | 40                | -          | 40         | 60         | 100         |
| 6             | PCC      | U18CI 706   | Biomedical Instrumentation Laboratory    | -             | -        | 2         | 1         | 40                | -          | 40         | 60         | 100         |
| 7             | PROJ     | U18CI 707   | Major Project Phase – I                  | -             | -        | 6         | 3         | 100               | -          | 100        | -          | 100         |
| 8             | MC       | U18CI 708   | Internship Evaluation                    | -             | -        | 2         | -         | 100               | -          | 100        | -          | 100         |
| <b>Total:</b> |          |             |  | <b>12</b>     | <b>-</b> | <b>12</b> | <b>17</b> | <b>320</b>        | <b>120</b> | <b>440</b> | <b>360</b> | <b>800</b>  |

L= Lecture, T = Tutorials, P = Practical's & C = Credits

| Open Elective-III:              |  | Professional Elective-III:<br>(offered by department)  |   | SWAYAM - NPTEL Equivalent course   | Professional Elective-IV:<br>(offered by department)  |  | SWAYAM - NPTEL Equivalent course  |
|---------------------------------|--|--|---|--|---|--|---|
| U18OE701A:<br>(offered by CED)  | Disaster Management                        | U18CI702A:   | Digital Image Processing Techniques       | Digital Image Processing   | U18CI703A:  | Embedded and Real time Operating Systems | -   |
| U18OE701B:<br>(offered by ECED) | Project Management                         | U18CI702B:   | Microwave and Optical Fiber Communication | (i) Microwave Engineering<br>(ii) Fibre Optic Communication Technology   | U18CI703B:  | Low Power VLSI Design                    | VLSI Interconnects  |
| U18OE701C:<br>(offered by EEED) | Professional Ethics in Engineering         | U18CI702C:   | Biomedical Signal Processing              | -  | U18CI703C:  | FPGA Design                              | -   |
| U18OE701D:<br>(offered by MED)  | Rural Technology and Community Development | <b>MOOC-III:<br/>U18CI702M<br/>SWAYAM -MOOC course</b> |   | (i) Introduction to Biomedical Imaging systems<br>(ii) Artificial Intelligence: Search methods for problem solving | <b>MOOC-IV:<br/>U18CI703M<br/>SWAYAM -MOOC course</b> |  | (i) Introductory Neuroscience & Neuro-Instrumentation<br>(ii) Python for Data Science |

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**Contact hours per week: 24; Total Credits: 17**



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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**SCHEME OF INSTRUCTION & EVALUATION**

**VIII - SEMESTER OF 4-YEAR B.TECH ECI DEGREE PROGRAMME**

[3Th+0P+0MC]

| S. No         | Category | Course Code | Course Title                         | Hour per week |          |           | Credits   | Evaluation Scheme |           |            |            |             |
|---------------|----------|-------------|--------------------------------------|---------------|----------|-----------|-----------|-------------------|-----------|------------|------------|-------------|
|               |          |             |                                      | L             | T        | P         |           | CIE               |           |            | ESE        | Total Marks |
|               |          |             |                                      |               |          |           |           | TA                | MSE       | Total      |            |             |
| 1             | PE       | U18CI801    | Professional Elective - V / MOOCs-V  | 3             | -        | -         | 3         | 10                | 30        | 40         | 60         | 100         |
| 2             | PE       | U18CI802    | Professional Elective - VI /MOOCs-VI | 3             | -        | -         | 3         | 10                | 30        | 40         | 60         | 100         |
| 3             | OE       | U18OE803    | Open Elective - IV / MOOCs-VII       | 3             | -        | -         | 3         | 10                | 30        | 40         | 60         | 100         |
| 4             | PROJ     | U18CI804    | Major Project - Phase – II           | -             | -        | 14        | 7         | 40                | -         | 40         | 60         | 100         |
| <b>Total:</b> |          |             |                                      | <b>9</b>      | <b>-</b> | <b>14</b> | <b>16</b> | <b>70</b>         | <b>90</b> | <b>160</b> | <b>240</b> | <b>400</b>  |

L= Lecture, T = Tutorials, P = Practicals & C = Credits

| Professional Elective-V:<br>(offered by department)   |                             | SWAYAM - NPTEL<br>Equivalent course   | Professional Elective-VI:<br>(offered by department)   |                              | SWAYAM - NPTEL<br>Equivalent course             | Open Elective-IV:                                       |                                | SWAYAM - NPTEL<br>Equivalent course  |
|---|-----------------------------|---|--|------------------------------|---|---|--------------------------------|--|
| U18CI801A:  | IoT Industrial Applications | Introduction to Industry 4.0 and Industrial Internet of Things                              | U18CI802A:   | Cloud Computing              | Cloud Computing                                 | U18OE803A: (offered by M&HD)                            | Operations Research            | Operations Research  |
| U18CI801B:  | Satellite communication s   | -   | U18CI802B:   | Mobile and Wireless Networks | -   | U18OE803B: (offered by MBAD)                            | Management Information Systems | Management Information System  |
| U18CI801C:  | Cyber Security              | -   | U18CI802C:   | Robotics                     | Robotics  | U18OE803C: (offered by ECED)                            | Entrepreneurship Development   | Innovation, Business Models and Entrepreneurship/ Entrepreneurship and IP practice |
| -   | -                           | -   | -  | -                            | -   | U18OE803D: (offered by MBAD)                            | Forex and Foreign Trade        | International Trade – Theory and Empirics  |
| <b>MOOCs-V:<br/>U18CI801M<br/>SWAYAM -MOOC course</b> |                             | (i)VLSI Signal Processing<br>(ii) Computer Vision and Image – Fundamentals and Applications | <b>MOOCs-VI:<br/>U18CI802M<br/>SWAYAM -MOOC course</b> |                              | (i) Optical fiber sensors<br>(ii) Deep learning | <b>MOOCs-VII:<br/>U18CI803M<br/>SWAYAM -MOOC course</b> |                                | (i) Patent Search and Analysis<br>(ii) Numerical Methods for Engineers             |

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**Contact hours per week : 23; Total Credits : 16**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE: WARANGAL-15**

*(An Autonomous Institute under Kakatiya University, Warangal)*

**SCHEME OF INSTRUCTION & EVALUATION of 4-YEAR B.TECH ECI DEGREE PROGRAMME  
SEMESTER WISE CREDITS DISTRIBUTION**

| SEM          | No. of Credits | Contact hours |
|--------------|----------------|---------------|
| I            | 21             | 29            |
| II           | 22             | 29            |
| III          | 23             | 26            |
| IV           | 21             | 27            |
| V            | 20             | 26            |
| VI           | 20             | 25            |
| VII          | 17             | 24            |
| VIII         | 16             | 23            |
| <b>Total</b> | <b>160</b>     | <b>209</b>    |

**SEMESTER Vs COURSE CATEGORY WEIGHTAGE for 4-YEAR B.TECH ECI DEGREE PROGRAMME**

*(in terms of Total No. of Courses / Total No. Credits)*

| Semester                       | Number of Courses / Number of Credits (Course Category wise) |                      |                    |                    |                    |                     |                   |     |                    |
|--------------------------------|--|----------------------|--------------------|--------------------|--------------------|---------------------|-------------------|-----|--------------------|
|                                | BSC  | ESC                  | HSMC               | PCC                | OE                 | PE                  | PROJ              | MC  | TOTAL              |
| I                              | 3/9  | 4/12                 | -                  | -                  | -                  | -                   | -                 | 2/0 | 9/21               |
| II                             | 3/9  | 5/10                 | 1/3                | -                  | -                  | -                   | -                 | 1/0 | 22                 |
| III                            | 1/4  | -                    | 1/1                | 5/14               | 2/4                | -                   | -                 | -   | 9/23               |
| IV                             | -  | -                    | 1/1                | 7/16               | 1/4                | -                   | -                 | 2/0 | 11/21              |
| V                              | -  | 1/3                  | 1/0                | 6/13               | -                  | 1/3                 | 1/1               | -   | 10/20              |
| VI                             | -  | -                    | 2/4                | 6/12               | -                  | 1/3                 | 1/1               | -   | 10/20              |
| VII                            | -  | -                    | -                  | 3/5                | 1/3                | 2/6                 | 1/3               | 1/0 | 8/17               |
| VIII                           | -  | -                    | -                  | -                  | 1/3                | 2/6                 | 1/7               | -   | 4/16               |
| Total                          | 7/22   | 10/25                | 6/9                | 27/60              | 5/14               | 6/18                | 4/12              | 6/0 | 71/160             |
| % Weightage of Course Category | 13.75 %<br>(22/160)  | 15.625 %<br>(25/160) | 5.625 %<br>(9/160) | 37.5 %<br>(60/160) | 8.75 %<br>(14/160) | 11.25 %<br>(18/160) | 7.5 %<br>(12/160) | 0 % | 100 %<br>(160/160) |